THE TIMES Higher Education SUPPLEMENT

Bradford calls for fees fight conference

Jaint action.

Most universities are still considering the letter but Warwick has already agreed to the conference. It Jahn Butterworth, Warwick's vice-chancellor addressed a tench-in on fees on Wednesday to mark the National Union of Students may of Manhors of the Legislan Wednesday Wednesday.

by Judith Judd

Bradfurd University this week touk the least in the fight agalust increased tultion fees by inviting all other universities to a Joint conference on the problem.

As student militancy ever fees ewept through the country, Bradford, which has alrendy decided out to chorge lighar fees for eversus students, seen out letters calling for hint action. The interest of the university's AUT committee, said: "We ore doing this in solidarity with our colleagues on the administrative staff. If the stintents want to take militant action they must expect to a week-long student occupation of the administrative block which had paralysed the university and its switchboard.

Dr Julian Kinderlerer, a member of the university's AUT committee, said: "We ore doing this in solidarity with our colleagues on the administrative staff. If the stintents want to take militant action they

Action.

At Sussex a university spokesman wersity branch of the AUT have aid it favoured joint ectins but also voted to withdrow their services in the avent of enother occupation. At University Callego, Cardiff, there were accificants and the polytechnics, there were a conficulty as emift tried to brack the configuration.

Imperial launches effort to increase contract research

miles incume from contracted research. The college's research income from sorres other than the University of Counts Committee was sorres other than the University of Counts Committee was sorres other than the University of Counts Committee was sufficiently contracted to the contract of Counts o

on AUT pay

in a formal position. The executive council of the National Association of Teachers in Further and Higher Education, for example, meets tomorrow to discuss its next salary claim to the Burniam committee and its attitude towards a continuation of the sociol contract.



An exhibition to celebrote the work of J. R. R. Tolkein (sbovo) opened at the National Book League, Albemeric Street, London, this week. The exhibition includes first editions, manuscripts and original lijustrations by the author for The Lord of the Rings, The Hobbit end the recently published Fothar Christmag Letters.

End certificate by 1979—ACSTT

by Clivo Cookson

**Excitation Cookson

**Excitation Cookson

**Excitation Cookson

**Imperial Collogo is to make a major of information contract research of increase its income from contract research of its undergraduate and postgraduate courses.

The rector, Sir Brien Flowers, its eet up a professorial Advisory Group of Outside Income to help achieve the first objective. Its presenting of the college's force as a teaching agreed that without losing sight of the college's role as a teaching institution, there is an urgent, coed to maximise income from contracted research.

The college's research income from sources other than the Univer
**Indicate of education should be phased out from Sentember 1979, the content focus of information concerning research opportunities. The decision last phased out from Sentember 1979, the phased out from Sentem

rentlimed from page 1

This commission to teacher training is emphasized. Plans are for over the pariod, in occordance with training and the beginning of induction training for those newly qualified too over the pariod, in occordance with training and the beginning of induction training for those newly qualified too over the pariod, in occordance with the training for those newly qualified too over the professor. It is will release film to professor of educational sciences at Edinburgh University, has been other fields (including organically). The science and for including organically the professor of psychology is at Brunel-University. The expanditure of the Matural History Museum and the Matural History Museum and the Matural History Museum and the public spending cuts. But they have been balanced by an addition to 1880-81.

However, resources davoted by the Guernmant's Expenditure of the Science Research Council to The Guernmant's Expenditure of the Science Research Council to The Guernmant's Expenditure of the Science Research Council to The Guernmant's Expenditure of the Science Research Council to The Guernmant's Expenditure of the Science Research Council to The Guernmant's Expenditure of the Deginning of the 1977-78 acts to the sentence of the Science Research Council to The Guernmant's Expenditure of the Deginning of the 1977-78 acts to the sentence of the Deginning of the 1977-78 acts to the sentence of the Deginning of the 1977-78 acts to the sentence of the Deginning of the 1977-78 acts to the sentence of the Deginning of the 1977-78 acts to the sentence of the Deginning of the 1977-78 acts to the sentence of the Deginning of the 1977-78 acts to the Degin the Degin to the Degin the The Degin the The Degin the

Question mark Brunel merger may save Shoreditch from closure

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In lea

Professor Ralf Dahrondorf, director of the Loudon School of Economics, has criticized the leok of concultation with universities on education spending cuts in his annual report. He complained that they were not encouraged to take the initiative in making economies hat to sit back passively and wait.

"No one needs oncouragement more than publicly controlled organizations, to which universities belong", Professor Dahrendorf edd. "Nothing le more costly than diecontraging them by unnecessarily restrictive rules, time-consuming bureaucratic exercisee and the gunarel practice of domination by pettiness."

City of London Polytchia, control and top-level talks before to appeal to the talks before not top-level talks before the calks of each of the polytechnic will be next account; year a life in the next account; year a life in the level until o decision a bour implements to the next account; year a life in the level until o decision a bour implements the next account; year a life in the level until o decision a bour implements to the next account; year a life in the level until o decision a bour implements to the next account; year a life in the level until o decision a bour implements to the next account; year a life in the level until o decision a bour implements the next account; year a life in the level until o decision a bour implements the next account; year a life in the level until o decision a bour implements to the polytechnic in the next account; year a life in the level until o decision a bour implements to the polytechnic in the next accounts; and the next accounts the next accou Professor Raif Daluondorf, director of the Loudon School of Economics, has criticized the leok of concultation with universities on education specification.

Two-pronged attack on poly

attacked

"I hope that local education authorities will not let such financisi considerations prevent polytechnics and colleges of education, which have teachers avoilable, from making a contribution to providing courses for the young unemployed."

Mrs Williams chaetised the polytechnics for the disappointing level of expansion in part-time education. She told the conference she hoped to see this area of public aector higher education expanding over the next few years.

The polytechnics had increased stelly onrolments of part-time stodents on sevenced courses from about 45,000 in 1965 to 54,000 in 1973-74 had been 6,175.

But "In many cases this is Talking about the finance and the second of the second o

the polytechnics had increased fielr oncolments of part-time stodents on sdvanced courses from about 45,000 in 1965 to 54,000 in 1973-74 had been 6.17 fit belong type of course that matura students can manage and it is now essential that those opportunities are open to shom."

Sandwich stodents represented nearly one third of all in polytechnics, seid Mrs Williams. She was awara of the difficulties of

the current year to provide) for over 3,000 students of types of saudwich course.

Times Higher Education Supplement. It will be bald at St Anne's College, Oxford, front April 1 to 4. Among the speakers will be Mr Gorry Fowier, formar Minister of State at the Department of Education and Science, Professor Max Boloff, principal of University College Buckinghom, Professor Brian Gowenlock, professor of chemietry at Heriot-Walt, and a momber of the University Grants Committee, and the Roy Dr George Tolley, principal of Sheffield City Polytechnic. research in Austrelia Prospects for in-service in

Inhoratories Nobai prizes Profile of Daniel Bell by Scott 1: Wilson

The fee for the cooference will be 529.50. Further dotaile can be obtained from Mr David: Hide, the UTG's conforence arganizor, et 38 limited at New Franke, Eimfield Rosd, Gosforth, Newcostie a newspaper of the Host upon Tyne, NE3 4BB.

Wollis's study

Cuts approach | Poly asks for quota talks

tresponsible.

Even quart from the question of differentials, they change the aystem of university finance by steelth, and

al university finance by steelth, and salidoversea policy through the back doer, placing additional burdens on local authorition in the process. It takes either greet cynicism or great ignorence to intruduce such a system, and the sooner it is theroughly revised the better.

When f first said this, etudents were silent. When two euccessive seriaries of State announced the fees last year there was no uproar among students. That he perhaps undestandable, for only o minority are affected by this change in system, and those affected are not the peop—but the relatively well-to-do wise lind it increasingly difficult to pay for the contributory social services.

Not one British working-less "In recognition of this per the Government los made and through the Training ser Agency, a sum of more had in

when I sat through the disrup-tion of the teath anniversary cole-bratian of my old University of Constance last year, heard the stories of Italian and Dutch friends, saw the graffitti in Leuven a few

weeks ago (locluding a rather finely one: "Oh Lenin return! They are mod!"), ir did not take

the carnival soason.

The aurprising fact le what the
New Resilessnoss is about, for its
objectives are totally different from
those of the late 1960s, end they
mirror e development in the educathoal scone which is drametic and
disturbing.

on his wider question, let mo repeat e point which I made in an earlier column, in verious articles, in contributions to diacussions in many relevant places, that the tultion fee increases, the method of their announcement as well as their level, in my view border on the irresponsible.

Not one British working-clase child is deprived of tertiary edocation by the new system of fees, eithough some may find postgradurate education, or midway chonges of subject, e little mora difficult now. I do not say this to offer excuses for indefensible fees, I eaven to bring out the rationale—if any of a now wave of student unrest. For what this is about (I believe

THE REPORT OF THE PERSON NAMED IN

get worse and worse and that this leterloration has to be stopped. The motive of unrest is fear, foar of an uncortain future. Such fear is shared by lecturers and professors, university administratore and vice-chancollors. Not surprisingly, thorefore, many of thom have found it useful to join their restiese students in their downers.

Startent Pores.

THE TIMES

Ralf Dahrendorf compares the student troubles of 1977 and 1968

sity cenates in the first place, then porty committees or other congenial organizations, in some cases entire political communities. With all the confesions, local end national differential confesions of the confesions of the confesions of the confesions. confosions, local end national diffor-encee which were cherecteristic of "troublee" in the late 1960s, they had one thing in common—the self-confident assertion of now claims, the demand for a plece in the sun. Education in the 1960s produced o rising closs, and in that sense a genuine revolutionery potential. But eles this phase was almost

child is deprived of terriary edocation by the new system of fees, alhough some may find postgradurate of subject, e little mora difficult would deny that they felt they work it being out the rationale—if any of a now wave of atudent unreat. For what this is about (I believe appension) is in feet a defence of parks of status que, of extension is in feet a defence of parks of status que, of extension is in feet a defence of parks of status que, of extension in the 1960s produced or rising closs, and in that sense a genuino revolutionary potential.

But what o change this is by comparison with 1968 in what o change this is by comparison with 1968 in the same of the late 1960s, faw would deny that they felt they work in the future was theire. Education, tortiany edocation in particular, had gone through a plass of unpracedent application in the 1960s, and in that sense a genuino revolutionary potential.

But what o change this is by comparison with 1968 in the 1960s, faw would deny that they felt they work about (1960s, faw would deny that they felt they work in the future of a wave, that they felt they work in the future of a wave, that they felt they work in the future of a wave, that they felt they work in the future of a wave, that they felt they work in the future of a wave, that they felt they work in the future was theirs. Education in the 1960s, faw would deny that they felt they work in the future of a wave, that they felt they work in the future of a wave, that they felt they work in the future of a wave, that they felt they work in the future of a wave, that they felt they work in the future of a wave, that they felt they work in the future of a wave, that they felt they work in the future of a wave, that they felt they work in the future of the future of

at 2 per cent a year until 1981.

All three rely on work commission money le to be distributed einned by other Government depart-

ing all over the place.

During the recent occupation of the LSE administrative building, one of the more striking features was the fact that although studente were at all times allowed freu access to the occupied area and nobody tried the force his way in, they then selves began at on early date to lock and chain duars, and to creet barricades af filing cabinets and chairs—a rather pathetic sight that, and yet the rehels of the 1970e probobly are frightened and insecure rather than confident and convinced of their rights.

In this they reflect the chart rise

of their rights.

In this they reflect the elant rise and rapid full of tertlary education in the societies of Europe. In 1965, it was not difficult to convince perllaments of the used to allocate funde to expanding universities, indeed oven a wider public could develop a certain enthuaism for the creation of new universities and creation of new universities and polytechnics; local communities were often printed to have them. In 1977, universities are pleased if their real income is cut by only two per cent because they fully expected to have it cut by four per cent, and it is ulmust taken for granted that salaries for neadenies enmaned.

that salaries for neademics compa-badly with those of other groups. In constituencies, tartiaty educa-tion probably ranks with oid for developing countries on one of the most unpopular issues of political ilebate. In a very real conse, tertiory education has hocome o declining industry (if that is the word for places of the leisurely pursuit of learning).

Declining branches of buman activity ere not particularly egree-eble to doal with. One can under-stand their plight, but their de-mande evoke the picture of a closed

Society.

I cannot help thinking bock to the numerous visits which I had a External Rolutions Commissioner is External Rolutions Commissionor in Brinesele by representatives of tha textilo indoetry. Usually, amployers and trade union representatives came together, osemad ma of their totei unanimity ami usked for protection—tariffs, quotae, subsidies. They had their reasons, but I am bound to say that I hevo little enthusiosm for a world in which everybody clamoure for, and gete, protection, because nobody has the confidence ony more to stand on innown two feet.

In the case of tertiary education, the problem is partly one of adsended motiven. Fred Illrach, in his remarkable hank on the Social Limits to Growth, points out impresselvely just how wrong the notion

continued on back page

Group urges halt to genetic engineering

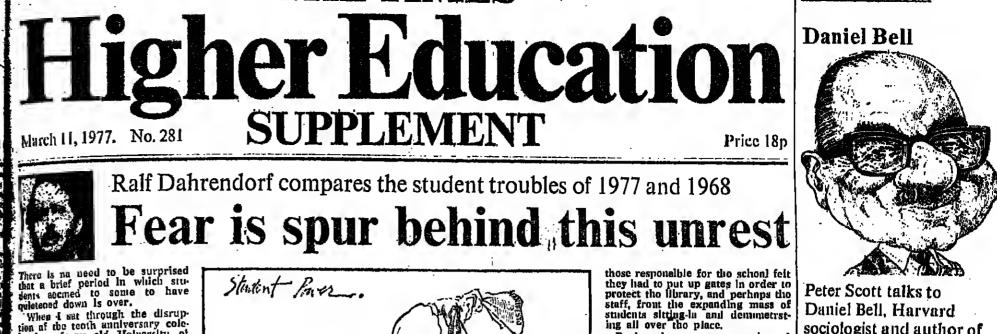
The money le to be distributed between the four SRC boards os follows: a celeur physics £43.3m; as follows: a celeur physi

three-day forum on recombinent DNA research, organized by the Notional Academy of Scioncos, got off to a controversial stort lost week when some of those taking part celled for a holt to all further experiments in this field.

Oxperiments in this field.

Dr Georgo Wold, the If arverd University biologist and Nobel Prize winner, together with Dr Llobe.
Cavallari and other scientiste, announced the setting up of a coalition for responsible genetic research (CRGR) which colled for an immediate international more torium on all research that would produce noval genetic combinations.

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Scientology

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Frances Gibb visits this outpost of the University of Wales which celebrated its 150th anniversary last

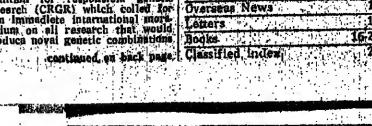
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A THES survey finds that. local authorities will spend less, not more, nex year. Judith Judd reports, 8

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Graduate employment

Cooperation urged for 3,000 industrial jobs

Industry wauld have to offer an extra 3,000 to 4,000 jabs in graduextra 3,000 to 4,000 labs in gradu-otes next year to counterbalance the cuts in other sectors of employment, according to the Durhem University Carecra Advisory Service admisi re-port far 1975/76. But it believes this is only likely to happen if there is considerable cooperation betweak Government, the universities and ambloyees.

If the Government was serious in its intention to encourage more graduates to enter fodustry, then the present policies of the Manpower Services Commission and of some Government departments needed to be better aligned with

The Job Creation Programme reg-The Job Creation Programme reg-ulations should be changed to make it practicable for industry and com-merce to initiate projects, it says. So far, the commission funds had been used almost entirely to provide jobs in the public service and vol-untary organizations, TOPS awards, financed by the Traloing Services Agency, should be available to

Private sector 'to take more'

The private sector is likely in re-erult smale 30 per cent mine gradu-ates this year than last, Mr Ken-noth Dibdon, allrector of London University Careers Advisory Ser-vice, has predicted.

In en article to be published in the university Bulfetin, he says this information may encourage finel year studente or present "flocking to an an unprecedented scale for interviews with employers".

His originof estimate that between 10 and 15 per cent of Loodon University's first degree graduatee last year would be unomployed at the ond of the year has turned out to be overnessfuled.

The proportion, excluding medi-cies, veterinary science and dentis-try students, was 8.1 par cont, 2 per cont lower than in 1975 when it was 9.9 per cont, in 1974 the figure was 3.9 per cent.

graduates who need further fullthmo training to equip them for
Industry and commerce.
In universides, the report
suggests, there should be more
contact between staff and employers. This was et present nonexistent, even in science departments. The luithtive must come
from employers but they would
need to foel their approaches would
be welcomed.

Marc greduates from Durham

Maro gcaduates from Durbam went into Industry (103) and commerca (131) last year compared with thu year before (68 and 84) and fewer into the public services (96 against 183 in 1975).

Sevorol industrial employers did not recrult all the graduates they needed, particularly electricol engineers, npplied physiciets, and scientists interested in empudyg, partly because they set unnecessarily high standards, so that the beat applicants bad half a dozen or more offers wille the average. or more offers, while the average often had none. In commerce, trainee chartered accountants were in porticular

Two-thirds

Over two-thirds of graduates from Haffeld Polytechnie gaining parmonent jobs last year went into industry, according to a survey by the Hertfordshire Careers Service on the destinations of fluel year studions.

Of all finel-year students, 68 per cent went into permanent anployment. Of thesa, 69 per cent went into industry and 18 per cant into the public sector. One in tan continued with further research or goad-amic ender. emic study.

Studeots who hed the least diffi-culty finding jobs had completed courses in alectropic engineering, computer science, mathematics and business atudies.

The proportion, excluding mediciee, veterinary science and dentistry students, was 8.1 par cent, 2 per cont lower than in 1975 when it was 9.9 per cent. In 1974 the figure was 3.9 per cent.

Among bigher degree students, only 2.5 per cent were unemployed at the end of the year compared with 3.2 per cent the year before.

Call of UK summer schools

Over half the students artending internotional summer schools at Birmingham, Leeds, Oxford, London and five Scottish universities last year damp from the United States, eccording to the universities joint committee annual report.

There was a considerable drop in

committee annual report.

There was a considerable drop in United States enrolment for the London school which was perticularly merked among young teachers and recant graduotes, but this could be a reflaction of the present job uncertainties of the group, the Street, London, WC1.

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SISTERS likely to get cold shoulder-Strathclyde v-c

The idea of the elite Special Institutions for Scientific and Technological Education and Resacreb (SISTERS) is unlikely to be adopted because of Britain's unwillingness to saveriment ecording to Sir society. Apart from the fluorial

the time, however, it was not notably strong in postgraduate work, and the Robbins Committee had envisaged the SISTERS having a substantial proportion (30 per cent) of students engaged on relyanced study.

Ins for Scientific and Technological Education and Resaorch (SISTERS) is unlikely to be adopted because of Britain's unwillingness to experiment, eccording to Sir Sonnel Curron, vice-chancellor of Strathchyde University.

In bis annual report for 1975/76 he says that when the idee was first lie out the finoncial include a mgn incl

n substantial proportion (30 por cent) of atodents engaged on indivinced study.

But now, although the university could easily grow to that pusting aduato strength it was unlikely the proposal will be edopted.

Britain had shown very litrio in alght into the noture of the lufrastructure of modern industry unlike the Uulted Stotes, France and Gormany which had always paid more oftention to their lending technological institutions than Britain.

Sir Samuel comments on the low morale presently in universities, porticularly as a result of universities, and porticularly as a result of universities, porticularly as a result of universities, and acquamtical to assert as a result of universities.

Cuts have 'almost eliminated' adult education in some areas

Aduft education is baing virtually eliminated in meny parts of the country because of cuts in discretionary awards and increesed focs, Dr Kaith Hempson, vice-chairmon of the Conservative porliamentary education committee, warued this week.

lle told the Association for Re-current Education et Ruskin Col-lege, Oxford, that a new etimulue was needed in adult oducation, which could be created by a

Dr Hampson predicted that the Government would aunounce details of its long-promised edvisory council et the Netional Institute of of its iong-premised edvisory council et the Neticoal Institute of Adult Education annual confarence at Lancaster University in Aprif. But he warned: "I emphassize that this body should be a dovelopment council and not merely advisory, which, after much heart searching the Government is rum, out at the great object of their morel duty.

The real masser to the problem was to adopt o recurrent system, he suggested. There was also a catelyst. "It would not take away local authority powers and lititatives but abould have funds to check local authority powers and lititatives but abould have funds to check local authority powers and lititatives of discrimination and have the masns to offer incentives to inetitutions and financing of adult educe the second system but aloued have the masns to offer incentives to inetitutions and financing of adult educe the second system but aloued have the masns to offer incentives to inetitutions and financing of adult educe the second system but aloued have the masns to offer incentives to inetitutions and financing of adult educe the second system but aloued have the masns to offer incentives to inetitutions and financing of adult educe the second system but aloued have the masns to offer incentive to beve three problem are receive grents from 21 there would be eating eway at the foundation of the eating eway at the foundation. The receive grents from 21 there would be eating eway at the foundation of the eating eway at the foundation. The receive grents from 21 there would be eating evay at the foundation. The receive grents from 21 there would be eating eway at the foundation. The receive grents from 21 there would be eating eway at the foundation. The receive grents from 21 there would be eating evay at the foundation. The receive grents from 21 there would be eating evay at the foundation. The receive grents from 22 the problem of the receive grents from

About 40 per cent of children had no contact with education efter leaving school. The resources ellocated to the post-school eystem had no impact on them at ell, ba

Mr Powler sald thet opportunities for meture students to enter teacher troining were now declining. But the Government's offorts to increess
the teaching profession's awareness
of productive industry could be
eotisfied by bringing in people
who had deferred their speciellst
training. If mature students could
receive greats from 21 them and

Guide to Scots courses

The Scotleb Education Department has just published a new edition of the handbook to the Ceotral Institutions ontlining their entry requirements and the range of courses available. It is available, it is available.

Red. Newcastle upon Tyoe University has and democracy did oot callivated life, wara major field in the present social crists. Instant in the presen

moral issues

TEC takeover Industry awards will be few

by Sue Reid
The industrial scholarships and it clear that the Government is planulug the scholarships as "states" awards for undergradentes.

While discussions about the fluid number and the amount of the scholarships are still in the preliminary states the Government is anxious. design courses A new committee to validate vos-tionol courses in art and design to be set no under the control of the Technicien Education Course the Government announced this week. Details of the scheme, which is expected to provoke

competitive.

A Department of Education and Science official said this week that the scholarships would be awarded the scholarships would be awarded. to undergraduates entering existing engineering courses or lighter edu-cation programmes designed specifically for particularly able Candidates".
Selection of sixth formers for the

week. Details of the scheme, which is expected to provoke profess frum some quarters, have been sent to 42 organizations connected with orr ond design education as a profilminary to detailed talks about the construction of the new body. scholarships would be based on scholarships would be based on attainment, potential, character, markation end cspacity. The choice of successful candidates would involve schools and industry, The organizations have been said that the format of the comming must have the widest possible sapport omong colleges, employed practitioners and the profession bodies representing art and easy

by Clive Cookson

science correspondent

University, said last week. lie called the Royal Society's re-

Any increase in the proportion of science end engineering students in bigher education will be small un-

less school mathematics and science teaching improves, Professor John Herlock, vice-chancellor of Salford

cont report on mathematics teach

ing "one of the most depressing I have seen recently". It showed then

Emphasizing his concern about the statistics, ha said they elmost deserved the description "national emergency—the problem of simultaneously reducing the overall numbers of teachers coming forward ond improving mathematics end science teaching is a very great one" he added.

Professor Horlock, who was speaking at a Manchester Polytachnic
conference on "Influences on Tartiary Science Education", said the
primary economic pressure on universities and polytechnics would be
to take more students without an

to take mora students without tak-

ing on ony axire staff, Student/
staff ratios in universities would
probably rise from the present
sverage of 8.7 (outside medicino)
twards 10.

"We must recognize that the

We must recognize that the major demand on our resources is. going to come from the 18-year-olds, now oumbering 760,000, but going to reach a peak around 920,000 in 193384. It would not fall back is its present level until 1992.

if social class; was takan luto account the drop in university and polylechnic applicants after 1984

At a meedog last week the unlessive put forward cartain proposals dailed at meeting some of the association's objections, now ombodied in the petition before the Lords. It he petition is not withdrawn men will be greatly delayed, es ethe ones will have to take place the ones will be on the university, the petitioners, to argue the The All'r.

ase the pertioners, to argue the the AUT is claiming that the Bill destined provide enough tacchar senate and that convocation, the injurishment of exist dense of the university, lody of existedents of the university, has en university has en university and that convocation, the sity has en university to change its atsuites.

April hearing for

London Bill

must recognize that the

But a covering letter from the Department of Education and Science etates that while the Business Education Council should be closely involved in consultating about the new body it would, with safeguards, be built into the safeguards. The letter added Market and Council and Council

of art and

nearly 60 per cent of those intend-ing to teach in primary schools did not have O level mathematics, and a Mr Gerald Fowler, former miniter of state overaceing high education, announced to the Hear of Commons last July the Gores similar proportion in secondary schools did not have specialist trainbody to velldate art and dep courses. He dispelled hoper the on eerlier proposal for stone valldetlon machinary, mode by "I think, without fully qualified teachers, it is unlikely that we ora going to eva a big incresse in the wheat pool from the schools. We may see a shift towards engineering, but this will be at the expense of the pure sciences". Professor Horleck said. working group set up as a read a tha Haslegreva report on technis education, would be adopted.

But meny artiste eod dasigners education are strongly opposed a links with either the TEC or is BEC. Delegetas at last year's represented Associetion of Asso Institutions conference voted a fevour of urging the DES to recenize their own body as the appropriate organization to represent a spects of ert and design edocates

Lord Vaizey raises of great debate

Teechers et all levels had the duy of reassarting morel absolutes duying the present crisis of meral authority in Britain, Professor Log Vaizey of Brunel University said in his Winifred Mercier Memerial Lecture et Whitalands College Wimbledon, at the weekend.

Lord Voizey said the advance of "moral relocivity" in society was eating eway at the foundation of British civilization and demanding from taechors and all those was influenced opinion the rediscorp of their morel duty.

findly iduals to produce greater productivity.

If the discrete production and take it seriously in reletion schools beve an absolute day productivity.

What Gerald Fowier, former mindister of estate overseeing higher aduction is could never do cartion, also expressed disappoint ment over the progress of the great debate. It ill became industry to criticize the education system when the distribution of the distribution of

to school pupils between 16 and 18.
But the DES disclosure this week has made it clear that the Government is planulug the scholarships as "states" awards for under-small and intellectual qualities "for small and intellectual qualities "for line of the part of the part

arships are still in the preliminory stages; the Government Is anxious that they should be jaintly spon-sored by the DES and sections of

industry.
Informal talks between the Confederation al British Industry, the TUC and the DES have taken place TUC and the DES have taken place but will now be expanded. Individ-ual firms will also be lavited to give their views no the scholarship plan hefore any finel details are given. An amanuncement is expected before Easter. Schadl leoyers accepting places on

was likely to be less than the corresponding fall in the number of 18-year-nids.

year-nlds.

Ile described the quated figure of 20,000 empty science pieces in universities us "mythical".

Her Majesty's Inspector, Mr Norman Booth, who spoke ofter Profesor Horlack, chided university und polytechnic academics for their apparent lack of interest in developmenta in schools science education. "There is a kind of ailence that is very difficult to penetrate", he said. He reminded his audience that the quality of school aclence and maths teaching depended on the way future teachers were treated

way future teachers were treated during their time in higher educa-

The low status of engineers by Britain is due to the low academic requirements of the engineering institutions, according to the president

dent of one of thom.
"I would suggest that the qualifying bodies—which means organizetlous lika our own—have sought

quantity rather than quality, and hove conferred professional recogni-tion the casily", Mr Eric Booth, I'resident of the institution of Elec-

trical Engineers, told his mombers

at their unutal dianer.

"if this shocks you I would remind you that it was only threa
years ago that the Council of Enginearing institutions made a university pass degree or its equivolent a

necessary part of the qualification of a chartered engineer. "If we want higher status for

our profession we must, in my view, raiso the academic standard of qual-

raiso the academic standard of qualification of the coming generation of professionel engineers."

Mr Booth, who is chelrinau of Yorkshire Electricity Board, sold the common feature of bigh status professions—which include engineers in some countries—wes a high

eers in some countries—wes a high standard of ecadamic education.

"Here I think wa ora coptives of our own history. In the early doys of the industrial revolution our skilled engineers were mainly self-taught men of imagination who had an insulative grosp of engineering principles", he said,

Dundee students

St Andrews, Strathclyde ond Ediu-burgh Universities, and Nopler Col-laga of Scienca and Commerce, mot to discuss the autonomy of Scottish students within the NUS.

The histitutions represented ore oil disaffiliating from the union.

New marine centre

The Natural Environment Rosoarch

stay in NUS

both pulytechnic and university courses will be considered for the Following the announcemout of the third Great Debate conference at Prestoo Polytechnic last week it was generally assumed that the scholerships would be awarded cently unuouaced scheme.

'National emergency' in maths

teaching, Salford v-c charges

coreers in manufacturing industry. The schularships were welcomed this week by the Conservative Party. Dr Keith Humpson, vice-chairman o

Its parliamentary education com-mittee, who colled for the Introduc-tion of a scholarship scheme lost ounth, said that lucentlyes were occiled to promote Industrial excel-

and refined treatment of the prob-lem. It is not a massive switch from arts to science in general that is wanted, it is the attraction of the ablest into key nreos of applied science and technology." The Government should lnunch

a notional industrial scholarship fund offering high prestige awards of hetween £500 and £600 competiof hetween £500 and £600 competitively to 100 sixth formors to take up places in key areas of applied aclence and technology, bo said.

The reasons given are the lessening need for meture students—Sidnoy Webb recruits only mature students—and the longer period which

Boyarsky furore threatens

Architectural Association

opposed by students, staff oud ad-

This wock a special meeting of the school community indicated its firm support for Mr Boyersky by calling for the establishment of an

independent panel to ranegotiate his controct, which, if Mr Boyarsky is to stoy on ofter Scptember, must be renowed by next Monday.

The 18-man canacil, which lucludes nine students and former licelost students who nro opposed to Mr lister Bnyorsky, has also been worned that year.

Professor William Frend, of Glas-

nopposed as AUT(S) choirmen, sald the problem of Scattlah educu-

gnw University who wes reclocted

tion was a broakdawn of cammuni-

cotion between the different levels.

A council would bring all sides to-

The Natural Environment Rosearch Council lians set up a new Morine Information and Advisory Service (MIAS) to deal with questions from any organization or private Individual about the asa.

Hased at the Institute of Oceano graphic Sciences at Wormley, Survey, It is an extension of the old being controlled by the proposed closure of four Scotland for more from all the allos they could get either and dafend education egainst decisions, entburny introduced in university government. The AUT(S) is also to press the allos they could get either and dafend education egainst the unione should be in the proposed closure of four Scotland to press the proposed closure of four Scotland for press the allos the volved in unionists formed such a relitrary interesting the unione should be in the proposed closure of four Scotland to press the proposed closure of four Scotland for press the proposed closure of four Scotland for the account staff olso noeded all the allos the volved in unionists formed such as the proposed closure of four Scotland to press the proposed closure of four Scotland for the account staff olso noeded all the allos the volved in unionists formed such as the proposed closure of four Scotland to press the proposed closure of four Scotland all the allos the volved in unionists formed such as the proposed closure of four Scotland be in the proposed closure of four Scotland all the allos the unione should be in the proposed closure of four Scotland all the allos the unione should be in the proposed closure of four Scotland be in the pr

Association'e independent school in London may be in jeopardy following moves by the AA council and to renew the contract of Mr Alvin Boversky the school and the school of the independent panel the school will take direct steps to negotiate onew contract with the chairman.

Critics of Mr Boversky claim that

AUT embraces Scots council

Allegations of overspending flove also been levelled at Mr Boyarsky. But he said this week: "The money

students in need ond a newly

nognitated lunse on the premisas in liedford Square now cost £70,000, instead of the previous £1,000, a

the conference oursed that the

courts be esked to eppoint trade

unimists either through the Scot-tish TUC or local tradus councils. Dr Goorge Hammersley, of Edga-burgh University, sold it was epimupriate that, since the children of tradu unionists farmed such e

Is awelting the outcome of its request to offiffute to the Scottleh

Shoreditch should be saved, Newsam urges

The liner London Education Authority should make every effort Shoreditch Cullege, Authordy should make every effort to preserve Shoreditch Cullege, Eghan, but Sidaey Webb and Philippa Pawcen and Furzedown Colleges will have in close. These recommendations were made to the ILEA's Further and Higher Edu-cation sub-committee this week by Mr. Below Managers, the week by Mr Peter Newson, the ambority's education officer.

His report says that, on balance, the believes the specialist courses at Battersea and Cartford should be kept. He suggests that Sidney Webb, now part of the Polyreclinic of Central Landon, should close rather than the education department at the Polytochnic of North

Newsam sees three possibilities; must satisfactorily, its places could cation; or the college could be linked with another institution; or

As it is likely that the anthority will be able to regain only one freestanding institution he says that Avery Hill should remain.

Mr Newsau says that it is with reluctance that he makes an recom-mendation for preserving Sidney Webl and Philippa Fuwcett.

The report points out that Inner London's proportion of fulfial teocher training wilf luve declined from 5.3 per cent to 4.4 per cent

Take training away from Law Society'

Articled clerks in London are urging that responsibility for the education and training of solicitors should be taken out of the hands of the Law Sneigly and given to a newly established independent legal training board.

The 3,000-member London traines solicitors' grapp has mude the controversial pleo in evidence to the Royal Commission on Legol Services. It is also calling for the aboliton of the College of Law and provided that the college of Law and arguing that solicitors' vocational troining should take placa exclu-sively in universities and polyteck-

nics.
The group says: "We leel that the Law Society has proved liself to be incapable of bucking after the interest of articled clerks. It has landequotely organized the system of orticles and the existing exomination system."

or orncles and "Ho existing exominotion system."
It alleges that while the Law
Society hos finated idees for the reconstruction of the training system
in the pest it has not been successful in persuading rank-end-file mem-

ful in persuading rank-end-file members to accept them.
Commenting on the present solicitors' exeminations the group maintains that the College of Law's course provision of centres in Chester, Guidford and London, is outdated. Closes, it cleins, are ton lorge and should be entrusted to universities and polytechnics solaly. to renew the contract of Mr Alvin Boyorsky, the school's cholrman, when it expires in September.

The connell has declared that it is not in the "best interests" of the school for Mr Boyarsky, who was uppointed in 1971, to remain. But the declaim has been vignrously opposed by students, ataff out aduniversities and polytechnics solely. "The 24 universities and 19 poly technics and technical colleges in England and Walos who in 1974 were running full time law dagree courses heve fur many facilities and

Allegations of overspending nover also been levelled at Mr Boyat'sky. But he said this week: "The money has heen spent ou bringing up tha schunl, which wua olmost closing in 1971, to its preaent level. It is now one uf the best organized of its kind."

Last yeor the Council of the Linw Sneicity postspaned plons to make the profession off-graduate from 1980. It also decided to deley for nne year the intruduction of e new Communi Professional Exemination, commin Printessional Exemination, to replace the present Part I, and a now finul examination, to be offered fasteud of the Port II gualifying exemination. Churses londing the the new axaminotions, whe introduced, wiff be offered by the Collage of Low and polytechnics.

The treluce enliciture new string are upunsed to the profession becaming all-graduate. They all organ against the infi-time collection of attidents preport for the Common Professional Exploration and the common professional Exploration and the common professional Explorations. London University's privete Bill will be heard before o committee of the house of Lords on April 19 unless the points of difference between that one referentiam last weak.

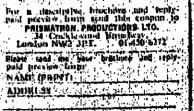
University and the Associetion of Students (UK) in the points of the points of difference between that or referentiam last weak.

At Edinburgh representatives of Students (UK) in the points of the points of

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The ascent of J.K.

quiry), while the ather Mrs Willions retreated to the feathlils of those alerter ecanomic atrategists, Lards Bologh and Kalder,

An hour later he was entegrophing capies of his book. "What shall I write ou this for Balagh", he mused. I am preparad to wager he put: "Best wishes J. K. Galb... no Mr Grapgrata I don't balleve we have met."

مويود بالمنظر والمراج أوالم والمطاحب

Blocking of mobility an 'international problem'

Building harriers against foreign students by increasing minion fees created a dangerous immobility in nity, a conference celebrating the 25th anniversary of the German Academic Exchange Service's work in this country was told last week.

The president of the service, Pro-fessar Hansgerd Schulte, regretted that Britain was not alone in build-ing harriers. The Germans were interpreting their 8 per cent quota policy lacreasingly restrictively and the French now enforced "unduly rigorous language authode tosts" for foreigners. Moves to restrict academic exchange were a result of the horemornization of intellectual life, Professor Schulte declarent.

The outlook was gloomy. There were thingers of a relatise into pro-rinciolism in university life. Academics ought come to long for the mobility their uncestors enjoyed when the medieval universities were at their peak.

However, the work of bodies such us the exchange service and the British Council could promote British Council could promote mobility. Its programme of bringing to this country younger students of English language and literature who

the professional tinor.

Mr Richer says his proposal would achieve the lumes report'a lasistence on the chrificution of training objectives and it would give the profession mare time to concell intending teachers.

"As the applicants would be more experienced, the selection procedure cauli concentrate an such dimensions es professionalism, personality and capocity to work with children of the particular age range."

If the pattern of postgreduate

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you total freedom to roam ee you will or slay rooled to tha

Pricas ara unballevebly low, from as little as £39 pp for 7 nights on the Coata Brava to £128 pp for 28 nights in. Ciela (from Lulon) and £121 pp for 14 nights in Switzar-

land (bleeklest included in pilcea lot Ausiria and Switzerland). The only additional coal you pay is the 2 per caol

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Probation period before

training, lecturer urges

tlecision-makers.
A clear and anambiguous poli-

tical decision by the respective thems as well as in the supra-national organizations is needed. The Ekelihood of such decisions being taken resis largely mon the initiative and resolute action of the European universities, and therefore, and the

firm opposition to an irretrievable drilt into a dendly provincialism."

Professor Schulie's words were echoed by Herr Korl-Günther von Hase, the Gerotan Amhassador, shortly to leave Britain to become his counter's repersonation with .commry's representative with European Commission in Brus-

He praised the constitution of the German Exchange Service (DAAD) which enables is to receive public funds while remaining a selfgoverning institution dedicated to proporting academic interchange and murual cooperation between

countries.

The service was established in the 1920s as the mechanism to take charge of liaison between German higher education and institutions alroad. Reformed after the Second World War, its brief is to act on behalf of the German Federal Authorities, the Lämler and its own member majversities on matters. are belog trained to become reactive of English had been successful. What was needed, in addition, was a clear commitment to inmember universities on matters concerning German culture abroad

retraining

mure vocational caurses.

many career journals had played drwn too for the vocational value.

of modern languages in an attempt to disabuse them of the idea that they could all become world-class

interpreters. Teachers should point to all the other jobs in which lan-

consider maths

Ten asked to

Ten institutions of higher educa-tion have been asked to consider-naturing one-year retraining courses

Mrs Williams, Secretary of State for Education onal Science, has asked the institutions to investigate the pussibility of one-year courses for qualified tenchers, including the newly qualified, who have been ouble to get johs.

The courses are intended for reachers who have not previously specialized in mathemotics but hove at least on A-level qualification in

A radical proposal to reverse the order of teacher training for graduates is made he a recent issue of The British Journal of Teacher Education.

Mr R. L. Richer, of Stackwell College of Education, suggests that greduates wishing to teoch should seek o probationary appointment of a school mut the fifth day at a professional studies centre. If this yeur were satisfactorily completed, the student would be selected for a course of initial training by a college or university department out the basis of the achool's report and the advice of the professional truot.

Mr Richer says his proposal would achieve the lumes report'a insistence on the chariffcution in trailing objectives and it would give the profession mare timo to concell intending teuchers.

"As the applicants would be more experienced, the selection pracedure of the particuler age range."

"As the applicants would be more experienced, the selection pracedure of the particuler age range."

"As the applicants would be more experienced, the selection pracedure of the particuler age range."

"As the applicants would be more experienced, the selection pracedure of the particuler age range."

"The British Journal of Teacher would be healed, since competence as a toacher would be the cheled, since competence as a toacher would be the cheled, since competence as a toacher would be the cheled, since competence as a toacher would be the cheled, since competence as a toacher would be the cheled, since competence as a toacher would be the cheled, since competence of selection of the cheled, since competence as a toacher would be the cheled, since competence of reacher would be the cheled, since competence of reacher by all the rundown of the BEd as unlinitial course of uniling. Instead, it could be course of uniling. Another result would be the rundown of the BEd as unlinitial course of uniling. Another result would be the rundown of the BEd as unlinitial course of unilinitial training. Another result would be the crumdown of the back of unilinitial course of univer In a letter to the principals of them sector the polytechnics and colleges the programme. Department of Education and Science says that, in designing courses they should concentrate an emailed: last contains the programme of the principals of the principals. rourses, they should concentrate on extending teachers' knowledge of the subject, on the content of the mathematics tought to populs of all abilities in the 11 to 16 age group and on contemporary teaching methods. There should be opportunities for school-based practical work.

Here of the content of the past two years the government had abilities in the 11 to 16 age group and on contemporary teaching methods. There should be opportunities for school-based practical work.

Mr. Gold sald that in spite of

The department ocknowledges that unthorities will not be able to the proposed courses and that the main source of recruitment will be main source of recruitment will be newly qualified teachers who are at present memplayed and those returning to touching after a brenk. Mandatary awards will be avoilable for newly qualified unemployed teachers. In other cases awards will be discretionary.

cauli concentrate an such dimensions as profassionalism, personality and capocity to work with children of the particular age range."

If the pattern of postgraduate training were unified in this way the status split between different mile changes to its proposals for initial training.

The British Journal of Teachar Education is published three times o year by Methuen, it is available ou subscription or at £4 a copy. Mr Richer's article is in Vol 2 No 3. will be discretionary.

The institutions invited to toke port are Sunderland Polytechnic, St. Martin's College of Education, Lancaster, City of Liverpaol College of Iligher Education, West Sussex Institute of Higher Education, West Sussex Institute of Higher Education, Cordiff, North-Eost Wales Institute of Higher Education, West Sussex Institute of Higher Education, Cordiff, North-Eost Wales Institute of Higher Education, West Martin and two fellows members of the carly sammer.

According to DES figures there work in Britain and two fellows members of the board, on existing policy studies work in Britain and two fellows members of the same and industry over oweil States, and considered various proposals for development of this area, such as those from Professor Half Dahrendorf, director of the Lumilont School of Economics, and Professor Half Dahrendorf, director of the Lumilont School of Economics, and Professor Half Dahrendorf, director of the Lumilont School of Economics, and Professor Half Dahrendorf, director of the Lumilont School of Economics, and Professor Half Dahrendorf, director of the Lumilont School of Economics, and Professor Half Dahrendorf, director of the Lumilont School of Economics, and Professor Half Dahrendorf, director of the Lumilont School of Economics, and Professor Half Dahrendorf, director of the Lumilont School of Economics, and Professor Half Dahrendorf, director of the Lumilon School of Economics, and Professor Half Dahrendorf, director of the Lumilon School of Economics, and Professor Half Dahrendorf, director of the Lumilon School of Economics, and Professor Half Dahrendorf, director of the Lumilon School of Economics, and Professor Half Dahrendorf, director of the Lumilon School of Economics, and Professor Half Dahrendorf, director of the Lumilon School of Economics, and Professor Half Dahrendorf, director of

payments review

The Department of Health and Social Security is considering changes in the regulation concerning partitime lecturers and examinars and notional insurance payments.

Ing part-time lecturers and examinars and notional insurance payments.

The chango now balag coneidered by the National Insorance Advisory Committee would mean a part-time reacher or lecturer who taught four mr more days in three consecutive months would be treated as an employee.

Cauttously.

The National Institute of Economic Countries of the property of the pr

months would be treated as an employee.

An examinor would be treated as self employed if he were engaged on terms requiring bint to finish the work under that engagement he less trade last summer than any of able for conducting or administering on examination leading to a cartificate, diploma, degree are professional qualification.

Stirling holidays pay

It is conference and holiday

It is morthly from college of Education, for the payon of the pay

Students forced into longer courses

by Judith Judit

Some palytechnic students are being forced to the four instead of two-year courses because they cannot get discretionary awards. Mr J. E. G. White, a lecturer at Walverhampton Polytechnic, told a conference of mondern language examination deal with all sorts of language examination bodies, all duing a good on modern language examination problems that cous in awards were having "a ridiculous effect".

Lecturers were having to advise students who wanted to do two-year examining bodies, all doing a good job within a limited range.

Some rationalization was neces sary to bring the work of all those budies and GCR it and A levels into modd/linguistic ones that they would have to do four-year rourses a graded series of language tests from horiom to top. in get grants. At the same time colleges were helig usked to run

Courses in pulytechnics should show their "relevance" in a munher of ways, through practical fau-Mr White also suggested that guage courses, emphasis on lan-many career journals had played guage skills, compulsary residence abroad, and perhaps a non-literary radier dian literary bias.

Mr. C. Vaughan James of the Centre for Information on Language Teaching, defended A level. He said

would not materially affect to dation of languages testing.

Traditional A level was to the few indicators of standard in ingly not be easy to say the level mean but it was trong by that it did not mean saybig, all. The problem with A but years

and its own mature but the aby

of an alternative. Both educational and vocate electricity were essented in so, language rourses. The populate that the less thic the leasure more vacational should be his house cause was illogical.

Acceptance of the orgine separability of educational and to tional elements illetoted the as for some redesign of course, advanced levels.

The conference, in the Polyted of Central London, was anesder neachers, polytechnic legaces;

packages and teacher outs to ating from the TUC college.

discussion document on moster development Issued by the Imi-Services Agency in January, h the TSA pur forward "moke-proposals for the agency to s-

with the education sector in his ong training, while at the sener

in the field of management dec

training, TSA, said the TSA t

on wish to harge into an areask there were already many otheriz.

Services Commission, under the authority the TSA open-toparded management develops as a national priority.

The training department of i

TSA was currently concerned v. defining framing objectives and a thecking on their efficiency.

topies of the documents (20) obtained from the TSA at 5 Regent Sucet, London WIR 65

and comments on d me wekes before April II.

A scarching analysis of many ocur development training to later last week at a conference Lambon organized by the Association

of Teachers of Management

Calling for a winter dissemina

of the teaching of managerial dis-tor combat. "British coose," Olimpury", Professor Charles has of the Landon Business School of

The conference also discust-

Greater union interest in manager training forecast

by Jane Feinmann

Management studies departments in polytechnics and calleges of further education will have to widen their perspectives over the next few years to incorporate the training of workers as well as managers, according in a Department of Education

Mr Jack Gold was speaking at a conference on management educa-tion organized by the United King-dom standing conference of heads of management studies and the Association of Regional Manage ment Centres in Linon.

He said even if there was no at least on A-level qualification in the subject. It is proposed that result of the Bullock Report on each course should take between 15 industrial democracy, the tracket and 25 teachers in addition in the union movement was already firmly approved intake to initial teacher training courses. tion and favoured the further education sector to implement its

(to 1966 there were only 21 mion courses in which 250 slup stowards enrolled: last year there had been

Mr Gold sald that in spite of unitual suspicion, management studies departments would be espected to incorpurate totale moon studies units.

But the introduction of such courses was samething quite new in education. The TIIC reserved the right, for instance, to select colleges for these courses, where staff teste felt to have the necessary experience. And he had introduced a new and very structured syllabus of the landom that must European compile in meed for their managers in undergo special training. Most big taught maths, statistics, and solling and very structured syllabus of psychology as a matter of rooms.

Maurice Kogan and Peter Hall of Shups to Introduce similar of Shups in Perhaps we have the respectively and improved to respectively.

It is understood the huard wants to trout the policy studies question and schools, that we have to not the policy studies question.

The National Institute of Economic und Social Research is to sponsor a series of conferences on economic notice executives.

At lost a chonce to see J. K. Gal-braith without all those visuals that illustrate his every comment in the television series. (For Instance, If he says "Good eventling" you test to get shepherds weving at you and children playing bappily by tho hearth and contented charal noises as larks wing homeword.) uspect of It." It is being held at the NBL headquarters at 7 Albemarke Street, London, until April 7 and is upen 10 am to 6 pm on weekdays and Ill am to 4 pm on Saturdays.

Un the other hand

Democracy just whom tworks of Brudford College of Education where a regional session of the great debate was held recently. The night before it was due to start the organizers realized there was not a single immigrant among the 200 delegates, although they make up 10 per cent of the city's populotian. So Eric Robinson, the college principal, sent out a member of staff to round up four such. Sudly, two declined, preferring to join the demonstration outside; one ogreed, but was nat actually seen; and the fourth left ofter lunch. hearth ond contented charal noises as larks wing homeward.)

I followed him dutifully round a lamching party for his book of the series, The Age of Uncertainty, to pick up bon mats and engagerous. At six foat eight he is probably the tallest demacratic thinker of our time and stands with a slightly upolagetic steap. "Good muroing", he sold. Nat a ehepherd moved. moved. However, I must report that ? However, I must report that 3 nm mone two keen on being his Boswell. Notehook poised, you get the kegioning of some trenchont crack groping its way tawneds the Oxford Book of Quotations only in watch it get diverted by some lattershop mon from Porlock who interrupts his train of thaught.

For instance, I asked him what it was like being o cult figure and haw I could become one. "Well", to replied, working up something reolly bright, "fame is like. . . ." Suddenly u panie of jaurnolists, having finished nil the smoked solnon sandwiches and swallowell as much free alcahal as le medically passible before 11.30 am interrupcel to ask a selection of the stereotyped questions which help to make our newspapars so baring to

Bore war victors

"S'nat ma fault", ha shouted defiantly late the haying, howling mob, "S'fire reggylations".

My favourita lecture was by a medic who telkad about limb canfusian and incorrect omputations.

fusion and incorrect ompatations. He triad to teach us how to differentiate between right and laft, on such occosions by showing four identical alides of the same billiard hall viewed from different anglas. The eventual winner of the Goldan Pillow award for the second year running was Dr David Coward, also from the French department, who spake on "the problem of the manned urinal" and afterwards told raportare that he challenged the world to be more boring than he was. "We would like to hold a national contest with other universities and then parhaps get the Americans in," Now that is a meeting I would dearly love to see.

from the very beginning. I not convinced that his work will last and this exhibition celebrates a new

BOTE War Victors
The instance, I asked him what it was like being or ant figure and haw I could become ane. Well' in replied, working up something really bright, "fame is like... in replied, working up something really bright, "fame is like... in the bear sandwhelms and what I could be come and it like... in the bear sandwhelms and what I could be come and the learning really bright, "fame is like... in the learning of journolists, laving finished all the smoked solmon sandwhelms and smallowal as much free sleahnd as le medically passible befare 11.30 am interrupted upestions which help to make our newspapars so baring to the total to make our newspapars so baring to the total to the stream our likelited and

peaked caps trudge past the coakar.
"Wha are they?", ha asked.
"Purton cricket teom", repiled hie

Ramala tayail with her chilled cumquats (which are incidentally o Chinase fruit and not a range af hills near the Cotswolds).

"Where are they staying Romala?"

TOIKIENTEST

Another drawback to being a cottigura is in the bizare farmed the service of the second different angles and manuscripts at the National Another drawback to being a cottigura is in the bizare farmed the second different angles and manuscripts at the National Another drawback to being a cottigura is in the bizare farmed the second different angles and manuscripts at the National Another drawback to being a cottigura is in the bizare farmed and manuscripts at the National Another drawback to being a cottigura is a lengthy letter from the author is a letter with a letter of the letter of

Increase poly's role 'as bridge with industry'

providing a bridge between industry and education which could be expanded. Mr Leslie Hackfield, expanded, Mr 1.05he linesteen, parliamentary of state at the Department of Industry, told the London conference on the relationship between the poly-

He said that polyrechairs were in n nulture position to confer with educationists and industrialists and called for the establishment of a "clearing house" within the poly-technics for the exchange of informotion between schools and foe-

taries.

In the current acodemie year there were 27,000 empty places on sclance and technology caurses in collegas end universities but if the number of able applicants had continued to grow in the early 1970s and successive Governments and pravitled the relevant resources there would now be more well-qualified engineers oul technologists. Mr Huckfield adıled: "There la

polytechnics to take in more students in science and technology to meet the needs of industry. We need mare of the right people applying."

A survey in May 1976 had shown

applying."
A survey in May, 1976, had shown that only 24 per cent of final year students wanted to enter industry ar business. Of those who were likely to gain first-cless degrees only 21 per cent were interested in industrial coreers.

Mr Huckfield suggested that Britain should reconsider tha policy of ollowing students to pursua the

subjects of their first chaice. He posed the possibility of moving over to a policy of more guided choice so that the needs of the country and its manufacturing base were given more prominence.

"When we turn out cight sociologists and nine historians to every one production englacer from auc universities and nolytechnics some thing is very wrong with our higher educational priorities. Without more production and manufacturing we cannot afford more sociologists and

enomen is for educators and industry trialists to get tagether. Industry can help teachers of mathematics and science to relate to industrial problems. Through this kind of liaison the importance of manufactualist and the months and the manufactualists. turing and the weelth-creating role of industry can be underlined."

Enfler in the conference, ottended by polytechnic representatives and industriellsts, Mrs Williams, the Secretary of State for Education, awoted the possibility of the Government introducing indus-

She said: "There is an urgent noed to attract more of our most able students into science and engineering courses, porticularly those with a vocational blas.

"We tunst Identify Industry's needs out how best to meet them. We must encourage more young people to aim for a cereer in the wealth-producing industrice on which this country's future eclargely along the second." largely ilepends."

New King's charter will be wasteful, Privy Council told

Proposals before the Privy Connell to give King's College, London, a new chorter heva been altacked as sactarian and wasteful of public movey by ana of the college's eenlor ecudemics.

Professor Hywel Lewis of the deportment of the history and philosophy of religion has complained to the Privy Council that the new callege cherier would involve religious fevouritiem. It would provide University Grants Committee maney for the benefit of the Anglican Church, he says.

It discriminated ngainst Mathad-ists and Beptisis and supported Anglican theological training in ana place when the Church of England was perfectly capable of looking after its awn elsewhere.

and the Auglican colouring of King's stoff and students.
Following recommandellous made in the Murray Report on London University, end what the college dean, the Ray S. H. Evans, calls the "organic grawth" of the theological department into King's proper, the new charter for King's proper, the new charter for King's proper, the department's staff should be absorbed into its faculty of theology which is organized on a non-damminational besis.

The theological department's private funding from Church of England source would caesa as its

land sourcee would caesa as its teachers becama e callege and a UGC responsibility. The Rev Evans would continue es doen but his salary, far a quasi-ecclesiastical office, would be found front privete

C.

Daniel Hell at first sight might he mistaken for a banker, below middle

mistaken fur a banker, below middle height, quiet blue pin-striped suit, neat moustache, and spectacles without which his face would seem locomplete. But when he apens his mouth to let the words jumble out—Aristotle and Arendt, Maeterlinck and McNantaru, de Tocqueville ond Time maguzine—the Harvnrd professor and author of The End of Incology and The Coming of Post-Industrial Society is revealed.

In an Importunt sensa Professor Bell's appearance is not misleading. That the man who perhaps has dune

most to refine the concept of posi-industrial society—u society in which among other features the centre of gravity moves from the

proletariat of the fectory gate to the millions of commuters who flood daily had New York, London or Tokyn to fill the offices and bonks—would not look out of place among these commuters seems a goal commuters.

among these commuters seems a neat conjunction.

Danici Beli was born in May 1919 in New York City. He was chiented there, first at City College and then at Columbia where he reculved his l'hD. He graw up in the vibrant years of Franklin Roosevelt's "New Deal" and something of the fluvour of the 1930s and early 1940s, in perilcular the enthusiasm for technocratic as opposed to ideningical radicalism, is still preserved in his intellect and temperament 30 years letter. "I am a socialist in economics, s liberel in politics, and a conservative in culture", he enys.

NOTICE BOARD

Dr. Michael Disney, urincipal research fellow in astronomy ut the Royal Greenwich Observatory, has been appointed to the choir of theoretical astronomy in the department of applied mailtemotics and astronomy at University College, Cardiff.

Dr Angus Easson, lecturer in the department of English ut Royal Holloway College, London, has been appointed the first professor of English at Salford University. He with take up his new appointment, which is based in the university's department of modern lenguages, on Septembor 1.

Professor Thomas Creik, professor of English at Dundee University, has been appointed to a chair of English at Durham University with effect from October 1.

ham University with effect from October 1.

Professor John Harria, professor of Egyptology at Copenhagen University, has been appointed professor of Egyptology and director of the School of Oriental Studies at Durhem University with effect from October 1.

Dr Matcoim Jayson, senior lecturer in medicine (rhenmatic diseases) at Bristol University and innorary consultant to Bristol Royal Infirmary, the Royal National Hospital for Rheumatic Diaeses and the Bath and Winford Orthopaenic Rospital, has been appainted professor of rheumatology at Msochester University, He succeeds Professor J. H. Keligren.

Belitor, Victuria Instory of the Coanties of England; C. R. Elrington.

Loughborough
Promotions to senior lecturer: J. I. Anderson (management studies); Dr J. Atha (human sciences); N. W. Beswick (library and information studies); Dr G. K. Creighton (clectronic and electrical engloeering); J. R. Freers (European studies); C. Hiepburn (polymer technology); L. R. Mustoe (eogineering manhematics); Dr R. J. Stretton (chemistry).

Stretton (chemistry).

Forthcoming events

"Censorship", a series of weekly maetings designed to discuss the constraints and the state on cultural activities, will be held from March 10 until June 2 at the Institute of Contemporary Arts, London. The first four meetings are: "The Press: is the lew the bast censor?", "Is the Press too Important to ba left to journslists?", "Problems facing publishers", end "Liberty is the visuel arts—18 it e delusion?".

Appointments

Universities

Liverpool Liverpool

Senior icciniers: E. M. P. Poskitt
(child health); M. W. Service (medical
entoniology). Lecturers: E. A. Dantury (Medievsi hietory); L. Brydon
and P. A. Roherts (social antiropology). Temporary icciurer: M. M.
Kamel (snaesthesia). Pronotion to
assistant director: N. Shone (ancial
work education division, instituta of
extension studies).

London Institute of Historical Research Editor, Victoria History of the Counties of England; C. R. Elrington.

Dean of dentistry: Professor Roy Storer. Lecturers: J. M. Bray (geog-rophy); A. D. Coltler (architecture). Temporary tecturer: A. B. Hsath (medical staristics).

Sheffield
Senler iccturer: J. f. Maddlocks
(pharmacology and therapenica).
Lecturers: D. D. Gittertson (preliasiory and archaeology); D. R. Phillips
and L. D. Richardson (sociological
studies); P. Redgrave (psychiology);
P. E. Sudbery (genetics); L. 1. Custa
(geology), Temporary lecturer:
P. L. R. Andrews (physiology).
Part-time lecturer: P. M. Anson (law).
Port-lima temporary lecturer: A. O.
Perriman (clioical dentistry). Parttime honorory clinical lecturers: T. F.
Fanalo (surgery); A. Kennedy
(pathology); E. G. Herzog (orthopaedics). Part-timo honorory clinical
tutors: I. F. V. Fussey and S. F.
Tiadall (surgery);

UMIST
Lecturer: D. J. Ling (civil end sirusonal engineerkig). Honorary fellows:
Sir Ralph Bateman, chairman of Turner
& Newall Ltd, and former president of
like Confederation of British fudustry;
Professor W. E. Morion, lajely professor of textile technology at the listitute; Mr G. N. Hounsfield, FRS, head
of the medical systems section of EMI
central research laboratories; Mr Joss
Naylor, of Wasdale, Cumbria, the
champion lell runner.

Polytechnics

Brighton Head, department of fluance and ac-countancy: Mr R. Nunns. Manchestar Head, department of chemistry t Dr P. J. Robinson.

Bath
The following will be awerded honorary degrees in July:
LLD; Mr William Recs-Mogg, sditor of Tha Times.
DSc: Professor Rsif Dahrendorf, dirsctor of the London School of Economics

and Political Science; Sir Monty Finniston, chairman of the British Seci Corporation; Sir Alexander Merrison, vics - chancellor of the university of Bristol; Sir Charles Ootley, emeritus professor of electrical engineering. Cambridge University; Sir Robert Williams, director of the Public Health Laboratory Service.

MA: Mr Robin Tanner, art educations, eicher and lesding member of the Craft Etudy Centre Trust.

Grants K 💖

Belfast

Bell ast
Muchantent and industrial englocering
—(120,000) from Do Reers Industrial
Diamond Davishm Lad. for conduncel
research on "Properties of tangatel
carbido under camplex stress at temperatures up to 600°C", under the
direction of Professor B. Crossland.
Gerlatrie Medicine—110,600 from the
British Heart Frontidation for research
on "Roomane and dipoproprial control
of Ripold metabolism to cultured
arterial samoth ionscie cells in relation to afteroscierosis", under the
direction of Professor R. W. Stont.

Space research—£214,804 from the SRC for n hard X-ray imaging spectrometer for SMM to Professor A. P. Williamre and Dr G. M. Shanell.
Physics—£64,914 for nucleor structure exploitation 1977-78 to Professor G. C. Morrison.

Morrison.

Electronic and electrical engineering—

£11,351 from the Post Office to study the effect of imperfections in quasisynchronious transmission systems on error rates in digital systems and time improvement obtainable using time diversity transmissions under the direction of Mr J. D. Parsuns.

Physiology—£2,276 from the MRC to atudy the role of sympathicic acrous system in the control of cerebral circulation under the direction of Dr O. Huddleko.

Social medicine—£8.856 from the MRC.

Physiology—£2,276 from the MRC to atudy the role of sympathetic nervous system in the control of cerebral circulation under the direction of Dr O. Haddicko.

Social nedicine—£8,856 from the MRC to the direction of Mr W. Carret for a pilot study of worth lead hand.

for a pilot study of toom lead levels under the direction of Dr 11. A. Wuldron; £5,454 from the Concer Research Compaign for epidemhdagical study of the incidence of multiple primary concer under the direction of Dr J. A. II. Waterhouse.

Deniat hesith—£4,750 from the MRC for studying oral conditions in relation to troco elements in human disease and the ondroument moder the direction of Professor F. M. C. Jaons.

Institute af local government studies—£2,544 from the Department of the

Environment for research has a thought futures for planning policies the direction of Professor 1.

Austrony—E14.511 from the k. Henlith Dransization for stack we effect of proyesterone and may terone out the inhibition of own when authorithmetered introvenible man female rhesus monkey, was direction of Professor J. T. Egg. Physical metallingy—13,005 feet.

Ministry of Defence for consistent in agnetic studies of mixed feet and maximity and parties in the director of the director

Transportation and environmental ulug—£12,053 for a study of peter all juries out direct arigins actar direction of L. Kilbuszewski. Surgery—£4,349 from the Cases search Compaign for development immunitological mediods in the ament of cancer under the direct bir A. D. Barnes.

Orol pathology—E6,721 from the gaunated Denial Co Ltd for high testing under the direction of k sor E. A. Marsland.

Botany—£12,508 from the Rule of Programment Research Council becompared by compared by the com

Open University programmes March 12 to March 18

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11.40 Social Paychotogy: The Stategical
14.00 Renatisance and Heformation:
14.00 Renatisance and Heformation:
14.20 Earth Science Toolee and Methods:
14.20 Earth Science Toolee and Methods:
15.33 [proc 2].
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An Expensión Liquid : Supplementary
Maistrin 18100 ; proc 5):

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Monday March 14

BBC 9 The Dinitol Computer: Data Processing in Action (TM221; prog 1)

7.05 • Sing in Action (TM221; prog 1)

7.05 • Scotory: Sainwaits and the District Computer of Ecotory: Sainwaits and the District Computer of County Theory and Atomic Structions of County Theory and Atomic Structions (Sainwaits of County Computers)

18.56 • An Introduction to the Chemistry of Corbon Compounds: Carbon-hydrodand (Carbon Compounds: Carbon-hydrodand (Carbon Compounds) (Carbon Compounds)

Or Mainer Hitting plant of the State of the At the state of th 10.00 10,20 • on Julia training (1) locate pro-18.45 .

Monday March 14

BBC 1
6.40 Bolds, Limids and Gases: The Tier of the Botton in the Botton of White and Cases: The Tier of White and Cases: The Tier of the Botton in the Botton in the Botton of the Botton in the Botton of the B

Automatically foundation for the second form of the

Replacement programmes for north Scotland and parts of Windship of Compositions of Composition

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7.05 * Mass Communications and Sp. A. Mirrar Held Up to E. (1) 355; prup H. Up to E. (1) 355; pr

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Presidential programmers for part for a surface of surf

were the individual reservation. The second of the property of the control of the

the title of an e-say on leisure. Hushhough not the tolginal free-holder. Daniel fiell has now established such a formidable squatter's right to the idea that no hucheconal court is ever likely to challenge in age is The idea developed slowly. He first used the phrase in some lec-tores given in Salzburg in 1959 but nigh at that stage it defined little more than a society in which the provi-sion of services has become more sion of services has become more significant as an economic activity than the production of goods. It was only in the 1960s that Professor Bell incorporated the new Iden of the rise of what he calls "intellectual technology" into the concept of past-industriel society. By "Intellectual technology" he meant more than simply systems analysis or PPBS (programme planning budget systems). Peter Scott assesses Daniel Bell, champion of

White-

the post-industrial

society", in our third

American intellectuals

S 26

article on leading

collar

or PPBS (programme planning builget systems).

"The goal of inteflectual technology is, neither more nor less, to realize a social alchemist's dreems the dream of 'ordering' the mass society', he wrote. "In this suciety tuday, millions of peuple duity make billions of decisions.

. Any single choice may he os impredictable as the quantum atom responding errationly to the maggregate patterns could be charted aggregate patterns could be charted as nearly as the geometer relangue. es incurly as the geometer triugu-istes the height and the norizon. If the commuter is the tool, then decision theory is its mester."

use the phrase "post-industrial society". The first uton to do so rots a British guild socialist, and intellectual descendant of Morris and Ruskin, who wrote a look in 1917 calling for a return to the society of children absorber. Also in 1678

of skilled cralismen. Also in 1958 David Riesman used the phrase in

decision theory is its mester."

Whot is post-industrial socioty? Daniel Bell hus devised e general scheme of social chango which divides nations into pre-industrial, industriel ond post-ludustriel categories (the last occupied at presant only by the United States but likely to include by the end of the century most of western and Australasio).

Pre-industrial societies—most of





Clive Cookson describes new areas of research proposed for the threatened Rutherford laboratory

The rapid run-down af high energy physics research in Britain ends next year with the closure of our light hig accelerator. Ninuod, the B GeV juroton synchroton at the Rotherfurd Luhoratory, in Oxfardahire.

As Nimrod's demise approaches, however, spirits are rising at the Rutherford, home of the country's nuclear physics programme sinca 1957. They fell very low when last year's financial erisis forced the Science Research Comell, to announce o 1978 closure date for the accelerator, which had been due to keep going luto the 1980s, and some physicists proking on Nimrod remain upset that the experiments may never be finished.

Other staff are becoming increosingly hopeful that the laboratory neurological physicists to a vignous pulicy unscathed, thanks to a vignous pulicy states of matter, the deuse plasmas is tates of matter, the deuse plasmas is taken in the provide two oppositions.

The Rutherford's activities would then be split into thrae roughly equal ports; high energy physics.

Work for CERN, the European accelerator general near Geneval work for the SRC's Science Board (mainly nautron beams and lasars); and engineering and computing activities. Seventy per caut

vital research facility, but Dr Stal-ford is convinced at its "very great scientific potential". The Rutherford's Neuron Dean

The Rutherford's Neuron Dean Research Unit has propered an outline design for such a neutron source, hased an the Ninrod complex's equipment and buildings. It could be built for less than £7m, excluding staff ensts, and completed within four years. (The cost of building a similar machine from scratch would be £25m.)

The laboratory's senior staff

ingly hopeful that the laboratory ne u whole will survive relatively unscathed, thanks to a vignrous pulicy of diversification oway from high energy physica, boing pursued with strong support from the SRC, the Rutherford's paroni body.

The labocatocy's director, Dr Geoffrey Staffocd, forecasts o loss of only 200 of the present 1,200 ataff by the early 1980s if things go according to plan. This could be achieved by natural wastage without redundancies.

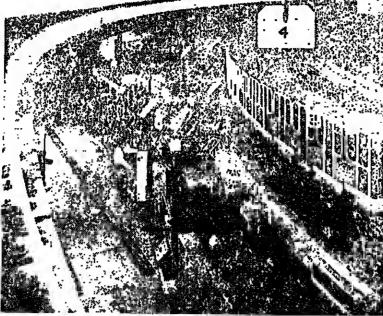
The Rutherford's activities would then be split into three roughly sould recover where the laser of matter, the deuse plasmas.

They are created when the two batters than o thousand the fight of a microsecondly strike in the tiny spherical torget and compress it to perhous a thousand of the present 1,200 ataff by the early 1980s if things go according to plan. This could be achieved by natural wastage without redundancies.

The Rutherford's activities would then be split into three roughly specification oway from high care and the two high care playsics have because into investigate little known is tates of matter, the deuse plasmas.

They are created when the two batters of high care playsics have become activities originally geored to high care playsics have become activities originally geored to high care playsics have become activities originally geored to high care playsics have become activities originally geored to high care playsics have become activities originally geored to high care playsics have become activities originally geored to high care playsics have become lunporium in their own right. An example is superconductivity research grown and compression of the present 1,200 ataff by the early 1980s if things go according to playsics.

The Rutherford's activities would the care playsics have become lunporium in their own right. An example is superconductivity research grown and compression of the present playsics have become lunporium in their own right. An example is superconductivity research grown and compression of the present plays and compress



luside the Nimrnd acrelerator. Due to close but conversion plunned

series of computer networks. A major research effort is under

way to extend the range of "inter-active computing facilities", which allow the operator to communicate

This expertise will be very voluoble if the long-delayed European
fusion project JET (Jains Europeon Torus) comes to Culhum, the
Atomic Energy Authority's estoblishment? aix unlies owoy. The
production of o superconductingmagoet to keep the high temperature plasma within HET's doughoutshoped rearbur will be a critical
element in the waylor.

siltutes in Britain and overseas changes that presage hone disease and mineralization, and clinical trials will sum start in Locals.

The flexible attinudes of the Rutherford scientists tin contrast to some of their university collea-gues) are making diversification allow the operator to communicate with the computer as it works on his programme and to feed in instructions as ho goes along. It will be particularly useful for designers of complex ongineering equipment.

Some activities originally geored to high energy physics have only along 60 scientists who ore activities originally geored to high energy physics have only along 60 scientists who ore activities originally geored to high energy physics have only along 60 scientists who ore activities originally geored to high energy physics have only along for making diversification awoy from high energy physics relatively ensy, Dr. Thomas, head of the Technology Dirision, says. "We have only along the original forms of the transfer of t

scale experimental apparatus, espe-cially for CERN. Examples include polatized targets for arcelera-tots, whose temperatures must be kept within hulf n degree of obsolute zero.

The SRC is heginning in make money available for university engineers in use the Rutherford's excellent fuellities, but it is proving difficult to get the academics inwork for the SRC's Science Board (mainly nautron beams and lasars); and engineering and computing activites. Seventy per caut of current work is in the high energy field.

A koy clement is the proposed conversion of Nimrod, after he closuce, into a "spolletion neutron soutee", glving short but extraoutee", glving short but extraoutees of neutrons and for research into computing some sceptical university accounts in the proposed for high energy physics sive data handling and one of the extension of Nimrod, after he closuce as the idea primarily as a means of avoiding n jobs cycles at the second of the proposed for high energy physics are proposed into the Rutherford in 1975, and is now the Rutherford in 1975, and is now the computers (IBM and enabled for the proposed for high energy physics or leing opplied in other fields—some including medicine. The Rutherford's element in the project.

Porticle and radiation delectors developed for high energy physics or leing opplied in other fields—some including medicine. The Rutherford's element in the project.

Porticle and radiation delectors developed for high energy physics or leing opplied in other fields—some leing opplied in other fields—som

A typical vecdict on his states achievement eppeared in a left of The Coming of Postisishing Society in the British Joseph Society: "It is an implement the range of ideas, theories in the range of ideas, theories on pictoral data which are discussed but also for the way in which the but also for the way in which the large available of a colored

The Government, too, is having serious doubts and is known to be coosidering ways in which it could ensure that money intended, for interesting actually reaches, its demination.

The National Union of Teathers has been obvious objection is the difficulty in frasting ducation differently from other services.

Whatever the objections, our survey shows that the Government must oct if the promised the current of special states and any that control and survey shows a squirted hearing the capanism of in service training is not to remain

White-collar age of Daniel Bell

continued from page 7

creation of post-industrial society this adversary culture which may be particularly influential la bies particularly intingular in high colocation, the power-house of co new order; the Ideologists & Keith Joseph in Britain, Mice Friedmann in the United States priverfully entrenched total graups within industrial field most notably the trade milos; see the min in the street opposed; creeping lureauernization; el perhaps most important of all, è hundreds of millions in Asia, Air, and Lutin America locked in possibility and the company. influstrial puverty.

In a recom article in Encounhe wrote: "The new social formI speak of allyanced industrial to

ties—are incheate and it may to he that they will be overwhelse from within by the declining so classes who, with greater urgenare seeking to protect their old methods, and from without by the seeking to me seeking to protect their old methods. forces of the third and fourth a fifth worlds that find themse economically disadrantaged in a duswer except to say "somethy throughly breational has been unlow in the world and we have run; of words to describe it".

This is the most important was

"The really important resource we have is skilled applied scientists. We ran not together multidisciplinary teams to tackle must problems in applied physics—something at which universities are often very had."

A major role for these trans is the design and production of large-scale experimental apparatus, especially for CERN. Examples fitched largest single part was in Britain, where his factories were later merged with others to found ICI. tinns of Capitalism, to tened to implications and influences of a social one recommended derelopment

> It is surely not udequate, no re-redictle, to see knowledge as a printing resource of power and a university or research lasting r its surlal locus in postadand society. Henry Kissinger and a exemption, you the rule. Political exception, not the rule. Policial and udolulstraturs, eyes à America, ure still as likely to ki land-owners or businessmen

etraining

ith Judd reports

It has been suggested that school-hased training might play on Increusing part in supplying refresher courses. Ducham County Council suggested that the high account school-hased training "which costs nothing".

But some of those Involved in troining urgue that this la false, if achool-bused training is being done properly, teochers will have o fixed amount of thm free cach week which will be filled by other teachers. Thore are wide variations in school-based training, often depending on the determination of the head. Even where staff, the results may be insignificent.

The teachers' centres the major fault in the same amount not the continuous properly. Land of the part of the will be spending about the same amount on them, and a few will be spending allout the same amount on them, and a few will be spending allout the same amount on the mandal forces their may rise of the will be spending allout the same amount on the mandal forces the may rise of the will be spending allout the same amount on them, and a few will be spending allout the same amount on the mandal forces the may rise of the same amount on the mandal forces the may rise of the same amount of the same amount on the mandal forces the may rise of the same amount on the mandal forces the may rise of the same and a few will be spending a little more.

It does in them. There are plans for a new centro for higher level courses and no increase in spending from £70,590 to £280,785. But it is not typical and it seems likely that is will be encoupass seems the progress of human behaviors.

The college has wrongly been labelled a thatlogical collage. It was founded by Dr Thomas Burgess, Bishop of St Dayld's, bacauso of the low standard of education of Welsb clergy, but has always provided a general university education, even when the majority of its

Lampetar's future as a university college was only recently secured when in 1961 it finally raceived University Grants Committee support. This was an uphill struggle fought by several college principals.

The first blow came in the 1890s, with the setting up of the University of Wales. The Government with diew its grant to the college, feeling unable to support both it and the university. Another blow came in 1951, when the High Couct decided that St Darid's could not be

Mike Duckenfield examines the history of the Nobel Prize

where he died; and Ardeer, Scotland, where he lived most of the years 1871-75.

Known as the "weelthiest vogabuld in Europe", Nobel, a bach, owned 355 patenta and mare through the Companies in 20 countries. thao 80 companies in 20 countries.

His ussets, which took four years in capitalize, accounted to 33.2m Sar—at today's values about £40m. The largest single part was in Britain, whore his Gestovies are later.

Nobel'a tight definitions—" the most important discovery, invention or improvement"—have also tended His estate went into a fund.

Administration of improvement "—have also tended to exclude medical practitioners is divided into five for the prizes such os John Shea, the American in chemistry, medicine, physics, colologist, his countrymen Willem Kolfl and South Africa's Christian Chemistry who have made major leaps is divited into five for the prizes of the country and willen in chemistry, medicine, physics, of the country and Willen literature and peace. Last year Kolfl and South Africa's Christiaan these were each worth 681,000 Skr (£98,000)—tax free in most coun-forward in ear, kidney ood heart sur-

A wealthy vagabond's controversial legacy

The muly thing new hont last breember's have do prizes ow milton Friedman one of the six 1976 Nobel prizes was that it extended controversy are rite awards to economics. Disputes over the other prizes have become almost ecomophage, recent remains according to the status and commercial prizes were the awards when increased, the status and commercial prizes have become almost ecomophage and plant vm Dng's shared 1973 peace peize and Alexander 1974 peace were also problems of the status and commercial prizes were born in controversy and, though Alfred Nobel slical in 1895, it was not until 1901 that the first awards could be made. The institutes designated by his will agive the peizes did not want the job bath Swedish Conservative and Status and control of the swedish Conservative and Swedish Co

Scandinavian or not."

In rearnspect the late-1950s was o wotershed for the acodemy. Until then eight outhors won the prize for single works including Thomas Mann (Buddenbrooks), Galsworthy (The Forspie Sagn) and Henningway (The Old Man and The Seo). Since 1954 citations have only been for badies of work.

badies of work.

As yet no African has won the prize, although the names of South African playwright Athol Pugard and Rhodesiao-born novelist Dorls in chemistry, medicine, plysics, literature and peace. Last year these were each worth 681,000 Skr (598,000)—tax free in most countries.

To administer the fund a foundation was set up. Three Nobel institutes were wiso established in Sweden—the Swedish Acadeony (literature), the Royal Carokine Institute (atedicine) and the Royal Academy of Science (clemistry and physics). The Norwagion parliament is responsible fur the peace prize.

The selection of prizewinners is highly secverive. Nominations close on the first doy of February and are then consideced duriog the spring and snamer by five-man committees—one for each prize—the content of the co

Gandlel.

Although the economics award la commonly called a "Nobel prize", it was not specified by Nnbel and nnly camo into existence in 1968. The Centrol Bank of Sweden, to mark its tercentenary, persuaded the science ocademy to award the prize "in memory of Nobel" at the same time as the others, prize moncy being given annually by the bonk.

Despite sceptics, who foresaw the problems of divorcing economics from politics, the academy agreed. Divisions over the distinction between economic theory and practice come in a head last year with the choice of Professor Friedman.
The introduction of a new Nobal prize raises other questions, too---

and why not introduce a prize for ecology? The foult in such arguments, howcrer, is that they support the status of the Nobel prizes as the world'e highest mark of distinction whon, nerticus, it is time to atart considering them just one set of prizes aniong many.

making awards, especially in peace.

* They come, respectively, from Ger-mony, Germony, Denniark, Polond and Chile.







Frances Gibb visits St David's College, Lampeter, which is celebrating its 150th birthday

It la a focol point.

Where Welsh trains and

Thioby, which closure a roal threat, the college racelved UGC lands, but under the agis of the University as a constituent college of still no really across the smallest—lif the oldest-of the condition, it is not mercially viable entertainment and tho nearest big town. Carmarchen, is 20 miles away.

Lampeter Is poscullar in another rospect. It has only 600, students the end of rheology as a subject in the small students for sity of Wales. Yet in its setting, a tiny market town in the hills of Dyvel with only 2,500 inbabitants, it has a focol point.

The accord market town in the hills of Dyvel with only 2,500 inbabitants, it has a focol point.

The accord market town in the hills of Dyvel with only 2,500 inbabitants, it has a focol point.

The accord market town in the hills of Dyvel with only 2,500 inbabitants, it has a focol point.

The accord market town in the hills of Dyvel with only 2,500 inbabitants, it is a focol point.

Feelings of "cultural and social deprivation", as one iectucer put it, ora found mora among junior lecfrom necessity than choica.

grant from the Nuffleid Foundation oud arranged also for students to use audio-visual facilities at the National Collego of Librarianship ot

The main problem for oll expanding subjects at present is the library, which was built to cated for only 450 students. Since the Aikinson report, Lampeter has had to chonge its plans for a maw building to those for a stora. Mr George Lilley, the librarian, soys that since the college is arts-based, this is particularly vital becouse there is little "dood wood". Apart from geography, the arrangles of the college are English and formal course than geography and, except for this year, has an unit action. Its emphasis is on British history, olthough Professor C. D. Chondoman, head of department, would like to sea expansion in the area of Europeon litocature.

In English, where applications are is geored to student choica, both in forms of assossment and topics. One feeture is the reading course, of the course is geored to student choica, both in forms of assossment and topics. One feeture is the reading course, of the course is geored to student choica, both in forms of assossment and topics. One feeture is the reading course, of the course is grown in the post five to etudy in depth and than write on it. Professor P. H. Davison, head in department, has introduced an interesting new option in text and film, for which he has secured a grant from the Nuffleid Poundation and arrangle also for findents.

Interdisciplinacy studies,

Academically the feed is toward interdisciplinary studies, hoth to courses and posts. A lociurer in acchaeology has recently been appointed, whose roving role is to offer courses to neveral departments, and the newest degree course, in religion and ethica, in Western thought, is interdepartmental. In the long-term, according to Mc Kenivright, departments may be replaced by schools of related and replaced by schools of related and reviowing the whole position of heads of departments.

For now, the college can do little more than look forward. As Professor D. S. Eyans, of the Weish department, put it, "there is nothing behind it but the frash air of Cacdigansbire and the Anglican tradition". But with money trickling in fram the UCC, oven now is something different from other pui-

Conference Land Africa Department of the Print



Government must lead on in-service training

That is the conclusion of a THES survey into spending on this area, as Judith Judd reports

Mr Ookes, Minister for Higher Education, is likely to be diseppointed in the fote of the £7m allocated in the cate support grant for in-service training. A survey of county councils shows that few will be spending more this yeer than han. Almost everywhere there will be cuts in the number of teachers seconded and in some areas in other types of provision as well. "They are the same." Authorities such as Lincolnshico, Nocthumberland, Avon, Choshice are all in this categocy.

Though a ganetal view can be formed all the figures in the survey must be teested with caution. The financing of in-secvice training le compile the figures in the survey must be teested with caution. The financing of in-secvice training le compile the figures in different ways and some were unable to break them down at all. Transport of teachers to courses may be shown as part of general transport costs rather than part of the in-service budget. It must also be remembered that some of the expenditure on full-time and part-time secondment is recoverable from the pool.

An examination of the different categories In other types of provision as well.

The expansion of io-sarvice training was the James Report's most important single recommendation and the chocus of voices demanding action has been growing louder ever since. The education world has been surprised and delighted by ministers' recent repeated commitment to the idea and by the decision to allow 10,000 places for in-activice training in the colleges and polytechnics by 1980.

ment to the idea and by the decision to allow 10,000 places for in-aervice training in the colleges and polytechnics by 1980.

But the important questions about both the distribution of accepted that incomply and places have not yet the important places have not yet the inspect of the incomply of litisoryice training made to spend the money of litisoryice training.

This has always been a notoriously sensitive subject for authorities, on the one hand they are

Clearly Mr Oakes is right. Secondment is the victim of most of the biggar cuts. In Worwickshira it will go driven from £341,000 to £284,000, in Gloucestershire from £90,700 to £35,860, in Hertfordshire from £293,600 to £147,800, in Someraet from £21,460 to £19,070 and in North Yockshira from £191,600 to £189,300. part-tima in servica BEds

This has always been a notoriously sensitiva subject for authorities. On the ona hend they are faced with the claunour of the Government and the cducationalists; on the other, thay must contend with public opinion which le often hostlle to projects from wbich there is oo ebvious and immediota gain.

In some countles, Mr Oakes' words have failed to prevent sizeable cuts. In Heroford and Worcestar, the original estimates for inservice training were alashed by £55,000. The cuts mede in the Education Committee's proposals mean the county will be snending £156,000 in 1977-78 tompared with £193,000 last year. In Hampshire tho total spending hea been cut from £894,700 to £683,100. East Sussex will trim £29,000.

Nottiughamsbire is a good example of a place In some cases the drop is matched by a small increase on short courses: in Gloucestershire from £20,000 to £27,650; in Somerset paratime sepondment goes up from £3,540 to £4,160 and there are slight increases in money to be apparant characters both inside and ounded the county. In Hertfordshire short courses will account for £175,300 in the coming year compared with £175,900 this year. Nottiughamsbire is a good example of a place where conflicting pressures are st work. All one-

where conflicting pressures are st work. All one-term and one-year secondments for toochets, were suspended a year ogo and will continue. The county has chosen to spend its monay on the politically more popular cause of upholding its pupil: teacher ratio.

The big cuts, however, are not typical of the general picture, which is one of standstill. The most common response to e quastion asking how this year's figures compare with last year's is: The shift away from full-time secondment may not be diseatrous provided after forms of in-secvice training are maintained. The purpose of training has always been twofold—the teacher's own personal development and the improvement of the limits action he or sha gives. Though the two are closely linked, full-time secondment has generally been associated with the first.

centro for highor level courses and un increase in spending from £270,590 to £280,785. But his not typical and it seems likely that it will remain uotypical in a survey begun recently by the National Association of Srhoolmasters, the will be the work of the

Mr Fred Smithlee, Assistant General Secretary (Educatioo) said tha union would have expected to sea an increase in the amount of money being spent on in-service training after the Government's announcament that from was earmarked for the mirrors.

NEXT WEEK'T Paul Shales

nient able to encompass equi-every aspect of human behavior suciol, political, economic and di tural—would have to be so that that it would lack any lotellets

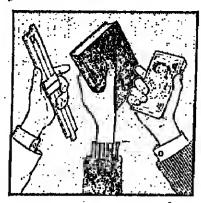
geography, history, languages, philosophy and even theology, which comes under both faculties.

Rev Petar Morris, a theology lacturar, argues that it would be pre-

Against a speed to a Company



St David's College, Lampeter , amall, is workable, in the property of the property of



*Society has cruelly jilted pure science". P. J. Black looks at the problems this has raised for university science departments in the fourth of our series on education and industry

Project work is one answer to dilemma of 'pure' science

ond support for lucreasingly expensive research.

The jilting hes heen peculiarly cruel ond comprehensive, particularly in the physical sciences. There has been o felling of student demand to worth the learners. mand to mutch the increased provi-sion of pieces, linked with n fickle-

slon of places, linked with n fickleness of the lady about the product expressed both by fluctuations in Industrial recruitment for research and development, each hy public expressions of doubt obout the value of undergraduate—and more perticularly postgreduete—degrees.

At the same time, pure scientific research has become Increasingly expensive. The needs of several linely findly dual universities, or even nations, to support theor, and more may follow this trend. To support the "big science" fields research staff were added in the heleyon days to the already optimistic complement of teaching etaff.

Today the combined affects of disenchantment with fils pure research and of funding by etudents staff retio aloes has left many depertments under any even and of funding by etudents staff retio aloes has left many depertments under any errors according to the complement of teaching the product of the complement of teaching the first part of the complement of teaching the first part of the complement with fils pure research and of funding by etudents that they cannot slauply add material, they cennot slauply add material, the concepts is met hy cuttleg out the concepts is met

depertments under govere prossure to contract. In common with most

to contract. In common with most lastitutions, such departments ere finding it hard to develop strategy or tactics for contraction after investing years of effort in expension.

Rapid growth leads to qualitative as well es to quantitive change. Academic subjects which are costly to support, and for which the short-term relevance to netional needs is not direct, must expect to be tergets for criticism when they become expensive enough to be noticed in ensive enough to be noticed in

expensive enough to be noticed in the budgot.

It is less often noticed that he yeschool, sixth-form science subjects ettract more than their shere of the most able, and that the best of this élite teed to choose pure science is degrees: this is a further, perhaps more important reason why society ought to ask the scientists to justify their ethes of teaching and research. eir ethes of teaching and research.

Yet that ethos—the pursuit of topics?

Yet that ethos—the pursuit of topics?

The arguments for better understanding the neturel world and the focusing of teaching on the achieve-



Zoolegy lehs at Leeds University.

Departments of nure science in higher education could be forgiven for regerding society es a fickle charmer who has led them through in heart-breaking liaison in the past 20 years.

She was more than arrient in the decade of ropid expansion when their teaching and their research oppeared to be loved for themselves elone. Dowrles of cosh and coreors were committed ie un equelly ardent response, and the liaison promised to produce large student numbers and support for increasingly

reesons. The hope that a graduate can have a comprehensive knowledge of a subject and can reach its frontiers has been feding slowly but surely with the explosive expansion of research.

The claims for includent of quite new fields of work icods lecturers to work wonders of compression and reorganization, perticularly when television programmes upstage the revision of some linal year advanced options.

better for a graduate to learn how to score half merks on easy questione about difficult topics than to learn how to achieve the same ecore on difficult questions about easy topics?



lum is justified as a training of the mind, of value even for those who will not be research scientists.

they cennot slamply edd material, the nised to weeve in more principles and concepts is met hy cuttlag out the concerte; details of real apperatus, of applications, of the history. Thus subjects relentilessly become all but the best studeets often survive by Isaming mucht details of requently expressed about the poor undorstanding of basic principles shown by a pressed about the poor undorstanding of basic principles shown by a pressed about the poor undorstanding of basic principles shown by a pressed about the poor undorstanding of basic principles shown by a pressed about the poor undorstanding of basic principles shown by a work with which they could develop more confidence and mastery. The dilemme bere is whether to ettempt more modest targets, and to face the paredox of cutting syllabuses drestically and so giving the appearance of heving rather low-level courses, in order to improve the quelity of graduates.

Apart from relsing fears about things—there is a more fundemental difficulty. To extempt to trade reage end sophistication to exchange for the simple additional they offer should serve productive industry, there is still difficulty in working out the implication of such acceptance, that the education they offer should serve productive industry, there is still difficulty in working out the implications of such acceptance, will know that his finel-year class will kn

The skills and ettitudes ectually developed in pure scisned courses may well be of value in mony areas of greduate employment, if indeed they ere the same as the skills end attitudes that choracterize scientific enquiry. However, the reletionship of the lecture-examination cycle end the leboretory composed of set-plece exercises to these desirable charecteristics is not obvious, and the task of formulating this reletionship as a set of propositions that could be usefully argued or tested hos received little ettention.

The emergence of many teaching innovations to supplant the traditional methods has brought construction as well as stimulus, and the enthusiests have often been met with feare of their gimmtekry, feers of their tendency to increase teaching loads, and worry about their failure to allow for the bewitchmebt of mere accepted.

their failure to allow for the be witchmest of mere accept the witchmest of mere accept. However, there is one receet development, the leclusion of experimental project work, which is well established in the undergreduate curriculum in several subjects. I would justify this by arguiog that the style of work and the eklis aed experience that are gained in k are very close to those of authentic scientific work.

A radical lesson emarges if we try to think of other activities using criteria of this type. The component skills needed in or developed by various facets of scientific work making, mathemetical formulation, design of investigations, communication of results and so on could be identified, and e serious attampt.

veloped, seperately and in synthe-sls, in various learning activities. Several groups have made e start

lng there is also a growing interest in the enalysis of skille and the ideetification of those common to the neede of many occupations.

These reections are not restricted to projects elone; one result of e study of verlous ospects of undergraduets courses (to be published soon by the Higher Education Learning Project) shows that when students telk about their work both our projects and on electronicities. on projects end on other ectivities, such as essay writing, in which they bave individual responsibility for a task, their accounts refer to feelings of independence, posseedon and achievement. Such feelings are absent from parallel descriptions of lecture courses, even when these courses are seen to be valuable.

courses are seen to be valuable,
This ought to be e chollengs.
Another result of this study has
underlined the obvious in confirmling that to most science undergraduetes, "following" e lecture
to course seems to be their most imde portant learning activity. Here thore
dis a simple obstacle in the fact that
come lecture courses still full below
that decent minimum of profeses slousl competence which would be
regarded as essential in other fialds,
notably research.

Ways in which staff cen come to
recognize end edmit this weaknoss,
and can be helped with it, noed to
be found, and the need is urgent in
science where students rely an
coursee both es thuir way in to a
new subject, es the definition of
the scope for tham, and all too often
as their sole guide.

But even given good lectures, the
pattern of following" a course
the pattern of following a course
the pattern of the activity
the to devolop leterests in the following the pattern of the pattern

on such work. It is significent that in the field of industriel trein-

the neede of many occupations.

But project work is not just "good" for students. It frequently arouses interest end commitment from students end appears to thom to be of velue in itself end to be relevant to their choice of carner.

The nuther is director of the Centifor Science Education at Chest Cellege, University of Lendonson

and with o tutor. This method ! and with a them. The memor by the next for several years in take on component skills in physics. Birotingham and hos recordy by taken up by several other physic European scientists back UK gene guidelines

The two criteria suggested share of lunking for development of the and attitudes and of enhancing the student's responsibility for his for work—need a third in complement them, for the business of the state of the them, for the outstanding teacher resource is the staff.

resource is the staff.

A teaching method should be judged by the opportunities is earnovide for staff to be instructed by their students about the problem of learning, and by its potential for encouraging staff to show the sking and outlooks which they posses a practitioners of science. This take the question about whether staff of the incention of science are pure sciential and so leads me back to the debar allour the enrichlem.

Propusitions to alter science as richk so that they can pure broader thus produces e contest and contentions debate and science lecturers and professor. Confusion often whee because the contest of the bronder olms are laterpreted dlyerse wnys.

Some urgue the virtues of his able to chuose something that is fancy—renuissance music will say as well as factory mannament it in purpose. Others look let 1 this purposo. Others look let harmaner view of science as a huminetivity—and so require course it he history, philosophy or society

Neither of these scores high park In the great debute ebout relevant to netlonal survival, which calls in work on the role of scients o celinolugy end in produc

Industry.

Dissension orises botween the who regard some or sill of the as valueless, those who see that as valueles, but out of place in the examined syllebus, and those the recognise them to be valueble to outside their competence as teacher who must speak with scalar authority.

euthority.

There is no agreed enswer, by
I find it hard to see how part
science training can be justified
by a presumption of relevances
wider needs if we do not acres
the duty of examining this pre
camption with our studeots. To a
nothing la to add u powerful by
fluence to the one we already and
by the set of providing our course. by the set of providing our covers end advertising their ettraction.

It may be possible to solve to difficulty of the steff's competent difficulty.

their cultural ectivity. It might he e greater mistake

make up response et all, for the is e dengur ther many scholar might feel themselves deprived at the means to pursus the ools she have work the pursus the ools are able to the means to pursus the ools are able to the means to pursus the ools are able to the means to pursus the ools are able to the means to pursus the ools are able to the means to pursus the ools are able to the means larly work they want or are oble a do, eed might lack the will to he eny now role as practitoners. scholare in orience. If e orbisionalel proportion of gar

once iccurrors were to rours had from the field of echolarship the from the field of echolarship the no emouet of curriculum planting or new teaching methods slided rescue degroe teaching from sliding.

Susan Wright on British and American approaches to the control of genetic experiments

Quis custodiet custodes?

while the public storm over gene transplant research and development continues this week in America at a major conference organized by the National Academy of Scionces, plans to facilitete end regulate this work in Britsin appear to be moving smoothly ahead in a much moro restrained fashlon.

But the American experience should not be too readily discounted es merely a reflection of the continues this week in American at a major conference organized by the continues to provide a technological engineering a striking congruence between the alms of scientific inquiry and the purposes of technology—the product in each case being a new life-form.

Leading practitioners are affiliated not only with institutions for besic research but also with industry. Research is supported from both sources. And knowledge pertaining to the techniques will be

But the American exporience should not be too readily discounted as merely a reflection of cultural differences, and there are useful lessons to learn from a comparison of deciden methods. parison of decision-meking in each country, and from exemination of the extent to which questions being raised on the other side af the Atlantic heye found onswers

In gene trensplantation, recently discovered enzymes ere used to cut sections of DNA from the cells of a donor organism, end aplico these fregments into the DNA of a totally appealed organism, the receiving unrelated organism, the resulting hybrid genetic material being knows as a "recombinant DNA molscule". In this wey DNA fragmolscule". In this wey, DNA fragmots inserted into carriers such as
plasmids (smell circuler pieces of
DNA) ar bacterial virtuses can be
traosferred into the cells of recipient organisms such as bacteria.

Becterie implanted with foreign
geoes will reproduce those units
as they multiply. And future refinaments are likely to make it pasoible to "turn the genes on",
snabling them to code for the protains normally synthesized in the

tains normally synthesized in the cells of the donor.

This power to construct novel organisms has been hailed as a prodiginus odvance, promising greet goins both for science and for society. The techniques are seen es powarful tools for probing the structure, function end regulation of genes—khawledge that could lead to en understanding of such medi-celly importent topics as the mech-anism of antibody diversity and the

anism of antibody diversity and the action of concer viruses.

Beyand scientific and medicul edvances, it is also believed that the techniques have ee imatenso notential far industrial epplications. Wheet end other important agricultural pleots might be endowed with their own mirrogen-fixing geoes, thus elimineting the need for artificial fortilizer. thus elimineting the need for arti-ficial fortilizer. And if the genes of higher

organisms can be turned on in bac-terial cells, becteria could be used as uniniature factories to manufac-ture e whole range of substances, such as insulin, grawth hormone, sotibodies end enzymes.

But it is now almost e truism marketed through patent mechanliot as the power to modify netural isms. While the invisible hand processes increases, so too does the arouses much less ire omong scientification. that as the power to modify netural processes increases, so too does the processes increases increase

lis humen components. Although proponents often see such dire seensrios as highly unlikely—nerticularly if safety preceutions are enforesd—some of gonotic manipulation's distinguished critics do not agree. Dr Robert Shisholmer, cheirmoa of the biology division et the Californie Institute of Technology, for example, said last year:

division et the Californie Institute of Technology, for example, said last year:

I epprectato that very stremous efforts will be meda by means of physical end biological contamment to ber the release of those organisms considered to be of significant potentiel hozard. Considering at the unknowns of pathology and the unknowns of pathology and the uncertification of evolutionary process, I sm not very confident we can know while ere the more trozardous combinations. Nor, knowing human frallty and the perversity of objects animate and incolmate, can I feel nuch confidence that in the long run these plasmids and viruses and organisms can be coutained, any more than were the deadly strains at Fort Detrick, or in another sphere, the plutouloum-coetaining wastes at Hanford.

We need apply the same rigor and honesty to these questions that we apply to our science. Nature will be no more thierant of guerroneous hypothesis.

At the conference, leading prectioners decided to lift the more-tolum eod replace it by broad guidelines for all experiments, except for e small class judged to be of extreme hazard. The task of drawing up detailed guidelines was then left to nationel committees in each country.

In America, this was corried out by an edvisory committee to the Britain guidelines were drafted by an edvisory committee to the Department of Education and Science chelred by Sir Robert williems, following an essessment of the problem by committee set up under the Advisory Board to the Research Conneils chaired by Lord Ashby.

An important difference between the two approaches concerns the form of implementation of the

At one level, the arguments on sither sida amount almost to who thinke who is best at playing God. And, since there is no body of experience to draw on to test opinions, this clash of values is reflected in uncortainty and sharp disagreement on such besic questions as the level of risk, and the effectiveness of courtainment.

protound.

Decision-meking both le Britain and in Amarica has focused on the short-term implications of the techniques involved. Concern over the inmediete health hazards resulted in 1974 in a pertial suspension of work, initially in the United States and subsequently in Britain, which was followed the following year by an international conference et Asian International conference et Asilomer, California.

An important difference between the two approaches concerns the form of implementation of the guidelines. In America the mein responsibility for assessing the risk of an exportant eod determining appropriate containment proceutions will fell to the principal researcher. She or he will be answerehle to an Nish review group known as e "study section," composed exclueively of scientific peers.

American and British treetments of the problem also differ in two other respects. The British guidelines will apply uniformly to all research in this area, whatever the source of funding. The American guidelines, on the other hand, at present apply only to research funded by the NIH and NSF.

It seems likely, however, that legislation in the near future will close this major loophole in the United States. Io addition, it has beeo clear that the American decisions have been largely controlled by prectitioners of the techniques. There is a sense of the fox guerding the chicken coon, not easily recouciled with the broad principle of separating the netivities of promotion and regulation.

Ie Britoln, on the other hand, decision-meking has been perceived to be lergely independent of vested interests in the techniques. And this sense of independent control will no doubt be reinforced by the image of the GMAG, o group which includes public and trede-union representotives.

two processes are possibly more fundamental than differences. Decision-making in both countries has proceeded under government agencies oriented towards promotion of biological research rather than concles oriented towards promotion of biologicel research rather than control end regulotion of bezerdoua technology. This has neturelly resulted in the formetion of decision making bodies which were similarly oriented: the great majority of decision-makers in both countries have been either front-rook researchers or directors of researchers. rank researchers or directors of re-search institutions.

Even on the GMAG, sciontists and Even on the GMAG, sciontists and research directors outnumber those with no direct or lodirect intersets in the techniques by about three to oee. (The ratio is more extreme than ene might expect from a cursory glance, sincs two of the four trade-union members also happen to be precitioners of the techniques.)

In eddition, major policy decisions In both countries were made prior to the review process. In fact, the

Frankenstein' project

given go-ahead in US

visory committee known es the Genetic Menipulstion Advisory ate bofare the risks heve been groun (GMAG)—a body which could heve coosiderable legal nuscle under the Health and Sefety at Work Act of 1974.

Appriles and British treatments to explore policy eliernatives for this omerging technology with core. However, if we lack hack et decl-sions taken in Britain, we find that

> The Ashby committee was set up evaluate costs end benefits. The Williams camulitee was charged with the drafting of a code of practice for research.

There scens to be e distinct policy There scems to be e distinct policy gap that has so far not been filled by any formel body. As a result, some important questions remain to be considered. What, for example, lo the potential for biological disruption when these techniques are used on a messive scale in Industry? What is the potential for deliberate misuse to biological warfare or terrorism? rorlsm ?

Should universities inedvertently encourage either of these poss blittles by treinlog en expouer increasing number of students in ncindes public and trede-union mont in a contplex and hazardous epresentorives.

However, similarities between the alternative and sofer nrees of we proceeds are possibly more research and dayelopment, elther

Is the policy being adopted in Britein opplicable to other countries which may he less steble both geologically and politically? What policy will best ansure reversibility of lavestment in this erce if future

It ell sound familler. These ero the problems of high terhnology, which society is attompting to deal with in other fields, often efter the fect of major disaster. Perhaps before yet enother potent techno-legy proliferates beyond control, this might be the right moment for major national commissions in each country to take a cereful look at the world which genetic menipulation may bring about.

Geno transplentation may also have a algoriticant impact on the local responsibility will fall to a social relations of molecular blological safety officer and e will operate under policy frame-biological safety committee. Their assessments development, the techniques show will be reviewed by a central ed
solutionment.

In both countries were made prior to the teview process. In fact, the Science and technology of the Unit operate under policy frame-biological safety committee. Their assessments works which are very elmilar in corrying out research into scientific each case, the basic assumption le fic decision-making in Britain,

Campus heroes meet in a sci-fi embrace

Pat Parrinder reviews

boss, learns how to greep the reins of power through successive meet-ings with Carl Jung, Harman Hesse and H. P. Lovecraft. The eudience are introduced to the semictics of the dollar bill, to the numerology of the number five (pentogram, pentacle, Pentogon), to a terrifying anthropological pupper show end a black mase featuring as Incontisent

goet.

Floally, Darn le the medlum for the manifestetion of Livisthan, who is introduced to his future mate, the First Universal Cybernetic Kinetic

*Illuminatus | By Ken Campbell and Chris Langham, at the National Theore's Cattesioe Theatra every Friday, Saturday and Sunday (2 pm

Ultrandero Programmer (FUCKUP). It may sound as though all this should be labelled "for eddicts

Illuminotion and prepered to reach this goal through niessive human secrifice—a conspiracy as old as humanity itself and instigoted, we are to suppose, by intruders from

the Science Fiction Theatre

of Liverpool's production

of Maissian Interest cure for epipe lear of eight-end-ahelf

lour drametic production

of Maissian liveries and the Liverpool

A CONTRACTOR OF THE PROPERTY O



nedy essassinction is seen through the (unused) gunsight of Lee Harvey to Swald.

Yoga, LSD, flower power, the Chicago convention and the mugic mushroom ere all thrown into a vitches' cauldron of conspiracy and counter-conspirecy, illusion end counter-conspirecy, illusion end counter-conspirecy, illusion end counter-conspirecy, a currealler crime-thriller end political farco. Scienco-fictiou opsclaists tend to be grateful, if mildly emburressed, that the result has been clessified as belonging to them.

Since end, Wilson hava obvious debts to Surroughs and Thomas Pynchon, end make coy references to virtually every other twentieth conterns as conspiracy of man redical, mentor eed pupil, Socrates and Gleucon.

It is a surroughs and Thomas I guitant on one of bare cempus dorminated in the result has been clessified in the roles of aesthete min redical, mentor eed pupil, Socrates and Gleucon.

It is a surroughs and Thomas I guitant on one of bare cempus dorminated in the roles of aesthete min redical, mentor eed pupil, Socrates and Gleucon.

It is a surrough and thomas in the roles of aesthete min redical, mentor eed pupil, Socrates and Gleucon.

It is not one of bare cempus dorminated the goddess Eris. The resulting conjunction of sephomors humour, can flex goddess in the goddes manic erudition and Playbey fantasy is indeed typical of n greet deal of science fictioe of the past deceds.

Imagine that you are e second year student teking courses in majic. By prunieg and re-ordering the enthropology. Eestern religion, craative writing and mineteenthic century English literature. 1968 may be severel years back but meniorles of eltins, the draft, demonstretions end stote police armed with osnisters of Mace etill hover eround the campus. (If you carry Mece in your formances.)

Slowly it dawns that the knowledge you erp being fed with must read of the past of the past

euthorities turning your brein into a computer with segregated memnry-banka must have some sinister reason for doing so.

Like much present as science fiction, Himmans la deeply haotile to aclence and aspires to the spetus of universal history while bearing out Henry Ford's precent bearing out Henry Ford's precept that history is bunk. In this story It is the bod guys, the aposites of

ageinst film er literary nartative,

Open University proposed

Holland

An umbitions system of "epcn" higher eduration for soluts should be intrudored in Helland, according to a report by two Gevernment

One of these, the Commission for Devoluping Higher Education, was set up in 1970 as an advisery body and has significant influence on matters related to chonges in ter-

tiary editrution. It tecently recom-mended the setting-up of general three-year higher educational

three-year higher educational courses which are new expected to

start in 1978.

The ether compiler of the report, the Open School Commission, is elresdy busy preparing a range of second-chance diploma and not-diploma courses up to higher edurational level eimed at housewives and working indults. The first of these laborations are the second sec

The new proposals, coming under the onbrella title of "Open Univer-sity", are seen us a link with these courses. The oint is for an adult with little or no scheoling to be able to catch up on his studies

frem beginning to end by using the "epen merlind of studying".

At present purt-line higher edu-cation for adults is limited to a few courses within the higher vocational

Legislatien te raise student grants

Is to bs introduced by the Benn

government. The blomust review

ef pupils' and studenta' grants was postponed as part of the cuts in

au ocress the board 10 per cent hardship increase was peld from

sinco 1974, as thet, with rising earnings, the required parental centri-

butions heve inevitebly increesed.

This has had tho effect of reduc-

ing the number of reciplente of full

awards frem 40 per cent of ell full-

time students in 1973 to 30 per cent in 1976; fer tens of theusands

of students, grents were stopped

The federal government proposes a very modest increase of the full grant fer students et universities and collegee from the present DM550 maximum to DM580 plus e tiny

Increasa in the contribution paid

towards a student'a health insur-

ance. Both increases would take

West Germany

increase

by Günther Kloss

January 1976.

eltogather.

The Times Higher Education Supplement (Lendon)

Mr Carter restores most budget cuts

President Carter has restered —\$390m compared with \$250m—nearly all the major cuts made by which will please the many students who depend an portaine work pro-

The Nstienel Science Feundation will get the full increase proposed by Mr Ford, with a budger of \$889m, and there will be an extra \$5m edded to funds fer biemedical fescerch et the Netional Institutes of Health.

of Health.

Altogether, higher education will get \$833m more than Mr Ford proposed. The bulk of the totel \$3,290m will be spent on student loans. Some of the loan programmes which Mr Ford deelded to eliminate have been restored. One, however, the National Direct Student Loans, will not get any more dent Loans, will not get eny more money because it is reckoned tepsyments of earlier loans will be enough in 1978 to permit new loans to more than half a million attidents.

The Basic Opportunity Grents will be made eligible to eu extra half inillon students from fandlies with accomes between \$13,000 and \$17,000, now obove the ent-off walnt. The next maximum of \$1,500

Research freeze ends

who depend on pont-time work pro-vided by their colleges and universi-

his predecesser in the education budget, recommending on increose of \$1,400m fer the education divided by their colleges and universities to pay for their tuition.

The Department of Heslih, Education and Welfare.

The President's revision of the Ford Budget gives eduration \$9,100m for 1978 compered with \$7,700m and includes enough money to ralae the maximum Basic Opportunity Grant to students from \$1,400 to \$1,600 a yesr.

The Nationel Science Feundation while got the full increase proposed by Mr Ford, with a budger of who depend an porteinte work provided by their colleges and universities to pay for their tuition.

The new Administration, lowever, wante to limit sorial security payments to the maximum Basic Opportunity Grant nearly payments altogether. They are made to reliege-oged children of insured workers who have died, retired or becente disabled. The amounts are based on the payment's average eornings under sucial security.

As a token of the Administro As a token of the conack ilis-lion's determination to onack iliscrimination mere vigerously, the budget for the Office of Civil Rights at 11EW gees up from \$33m to \$35m, with much of the incresso esmorked for the enforcement of regulations banning sex bias in educational inalitutions.

educationol inalitutions.

Considerably mare money is proposed for health professione education, with increased scholorship funds for medical students ogreeing to serve in sreas of shortoge, and more money for training in family medicine end primary care, the representation of health care is going to be one of the muln cencerns of Mr lesepis Califono, Secretary for HEW,

half million students from families with iacomes between \$13,000 and \$17,000, now obove the ent-off point. The new maximum of \$1,600 is etili not os much as the \$1,600 authorized by Congress last year, and the increases will not teke effect until the 1978-79 acedemic year.

Mr Carter also proposes more money for work-study programmes

HEW.

As with Mr Ford's Budget, all these figures are just the basis on which Congressional Appropriations Committees—which heve the final say on how much money goes to education—will work. They are clearly more appealing than Mr Ford's proposals for educotion and another major university in America—this time Corneil. A roport by o special committee proposes limiting like time students work outshile in the page as being the proposes in the page as being the proposes.

contracts

Johns Hopkins University received more than \$100m in military re-searth contracts from the Departnent of Defence last year, according o Pentagon figures. Together with he Massachusetts Institute of Techndogy, the two universities received for more money than any others of the 79 that were included in the list of the 500 largest research con-

In order, the top 10 were; Johns Hopkins (getting \$106,091,0001, MIT (\$100,788,000), Stanford Research Institute (\$24,307,000), University of California (\$18,256,000), University of Southern California (\$12,999,0001, Pennsylvania State University of (\$10,995,000), University of Rochester (\$10,464,0001, University of Texas (\$6,942,000), University of Washington (\$6,775,0001 and Stanford University (\$6,614,000), Altogether the 79 calleges and

Altogether the 79 colleges and naiversities held contracts totalling \$406m. Over the years this total has remained fairly constant, but it has been distributed among fewer and fewer institutions.

Johns Hopkins Call for major Ne York shake-up

THE PROPERTY OF THE PROPERTY O

A report by a state commission in tog its reputation in $z_{\rm Rec}$. New York says two or America's largest academic institutions the CDNY would be equally at the break-up would shally of the last great state.

the State University of New York and the State University of New York should be broken up and reformed bito two new statewide vestenes. The proposals base been strongly criticized by both institutions.

The report by the special commission he Albany, the state capital lanking at the future of the troubled City University, was that in uvercome the immediate crisis the state should give CDNYs force senior colleges an extra \$10m next year in avoid permanent damage to thele "durability and integrity".

In the long term the present administrative units should be regrunped ima two new systems, tine, tentatively called the "University tentatively called the "University of New York", would coursist in CUNY's graduate resurce and four oldest colleges—City, One of the State University's eampuses at Albany, Blughomton, Buffalo, Stony Breok and a few other muits.

The state of the state

The other system, the "Empire State University" would include the remoining City and State colleges organized into three regional groupings.

These proposals have so far been at publicity ever its illumble guarer, less mailfied stages accurring not aware of the far accurring the proposals have so far been accurring to the far accurrence of th

been distributed among fewer and fewer institutions.

Lost yost sume 100 non-profit institutions (Including the 79 universities) got defence research grants totalling \$682m. In 1968, 131 non-profit institutions (including 102 miversities) get \$665m.

The high total fer Jehns Hepkins, a small and prestigions university and state oriented mulnly te medical research, is easily expisined. The university's spilled physics inhoratory, some milea from the main cumpus, has, since the Second World War, been virtually under contract to the Nsys. Its research is therefore funded overly year by lerge grunts from the Department of Defence.

The Mossachusetts Institute of Technology has a inreg luboretory—the Lincoln Lshratory—whileh spensered by the gevernment, though run hy MiT, whese research prejects ere specially geared te national defence needs.

ald is linked to enrolment to versity needs at least as may year us it got last year. Tou-hulster flagging applications tensive campaign has began-city' schools: rounsellor:

help available te elfset ther imposed tunion fees; and to eral suply of collegenged see beginning to slirlink, release fall in birthrates that begin The City Huiversity is now.

arged to use the fall in apple as a way of going through the ful comraction necessary is whole system without disage

Cornell urges less stress

Americe—this time Cornell. A should spend at least 32 hours on and directing them in study e runge of subjects. A Board of General Education should be set up to superviso tite chongos.

The Cenedian government's unpopular freeze on funds for university research has ended. Estimates before Parliement propose e risa of 12 per cent next year in the budget for the three research councils, and Mr Hugh Paulkner, federal Minister of Science and Technology, hes reaffirmed Ottawa's commitment to be reaffirmed.

Was the bact way of deciding which is reaffirmed brought together the best minds and sometimes even from ebroad. Through the process of peer review, country.

But to be successful the system Corneil, howover, unlike llerverd, loes not recommend going book to compulsory coro curriculum, This is a question of some contention on the cempus, with a number of lea-chers, including Dr Ceri Ssgsn, the distinguished astronomor involved in tha Vikinge' Mars experiments, strongly supporting a compulsory

Corneli studente sre organizing a

Technology, hes reaffirmed Ottawa's commitment to basic rosearch in universides.

The proposed increese in funds of \$20m will be that first since of an all interior rise was approved for the Medical Reaearch Council last year as a result of an unprecedented campaign by doctors and biologists. The other two councils have had their funds held at 1975 levels.

For 1977-78 the estimeted funds And he asked the federel research for the councils will appear to become inward-leoking. And he asked the federel research for the councils will appear to become inward-leoking.

altional coupres of selentific tapeablitides, the process of support of interestional problem are as — enougy, occanography and the environment.

Research and for goetloand problem are as — enougy, occanography and the environment.

Research and for goetloand problem are as — enough of the plant of the control of the control of the control of the plant of the control of the

The Graat Doinge over undor- Levitt, Dean of the College of Arts

poses limiting like time students work outside his men as poses limiting like time students likation. What he should study in 24 of these is prescribed according to his "mujor"-the rest is up

In the case of a chemistry major, fer example, a student could satisfy the proposed distribution require-mont by loking a total of eight credit hours in courses in the hip-iogical sciences, the hipcredit hours in courses in the hiniogical sciences, the history of seience or the philosophy of seience;
elgit hours in enthropology, linguistics, psychology, sociology, govermont or economies; eight in the
clessics, history, literature, philosophy or the performing orts; and
eight more distributed among any
of those fields.

had their funds heid at 1975 levels.
For 1977-78 the estimeted funds he estant to become inward-leoking.
For inproving the region of the major of the support of interdisciplinary research councils are shaped of the provinces.

The report was commissioned 18 mounts ago because of considerable interests in vices and the process of delentific capabilities.

Capacita's research councils are shaped of interdisciplinary regions of delentific capabilities.

The report was commissioned 18 mounts ago because of considerable interests in vices and problem.

Capacita's research councils are the process of interdisciplinary regions of delentific capabilities.

Capacita's research councils are the process of interdisciplinary regions of interdisciplinary regions of the nearly interests in vices are and for octional problem.

Research council has a council and the Medical sociation of University Teachers.

Research Council has a council at the university seeded the university seeded may be adopted the university occasions are in mathomotics both of which or intrinsically tied to his mojor field.

The report was commissioned 18 mounts ago because of considerable may be interest in vices and problem of interdisciplinary courses in the process of university over the occasion of interdisciplinary regions and the moint report was commissioned 18 mounts ago because of considerable may be interest in vices and problem.

The report was commissioned 18 mounts ago because of considerable may be interest in vices and the interest in vices and the interest in vices and problem.

The report also suggests serions to the university level to the considerable may be interest in vices and the interest in vices

... And Canad worries about literacy, too

Worts over declining words, literacy among subsessity was those nut stop of the 49th Page For the past few months, unrest emong West Gormany's students hos been steadly mounting. Even the A new report by the Associated Canadian University Teacher lotost official statistics indicota that English is strongly child inefficiencies for the teachers for the teachers linglish at schools, the profition of aircranive English (42), in Causdian universities (24) there all lack of rigour latheral lack of rigour latheral the DM550 (£137) e month maximum gront la at leest DM100 below the estimated reasonable living cost Also, the allowances set egsinat parentel lucedio befora it is assessed have not been revised upwards

Apart from the top 15 per new students were far less pers in English than they were in past, says the report. It himself vision, the decrease in the spent in English in the school than the school to the same than Processily on the study of pass;
—the abandonment of many countinations end procest quite tiens among English school leads.

At university level the 1975.

Government seeks streamlining Grants set of technology institutes for modest

PARIS

Final examinotions, too, would offer o wide variety of rhoice. To

from Gny Neave

Discussions over the reform of the contreversied University Institutes of Technelogy—the two-year epplied aclance celleges—are deedlerked.

In Dacember (THES, Decamber 17) Mmo. Alice Samier-Seite, the Secretary of Stote for Universities, usked the Netienal Education Commission, e consultativa body of experts, to make recommendations for wide-renging changes in both teaching and staff appointments. The commission sent out a questientie to the institutes, the results of which are currently being evelunted. They will be published next month.

The Secretory of State hoped the

month.
The Secretory of State hopod the commission would suggest a number of changes in the tesching losd and in particular on incresse in the omount of individual work done by students. It has not deno so, it necepts that more teachers with industrial end work experience ore needed to halt academic drift in the lastitutes. But it has falled to ogree on a reduction in the number of commisory jectures.

on a reduction in the number of commulsory lectures.

This is a satback fot the Secretery of State—as a cut in the teeching timetable was one of the main proposed ways of roducing the size of IUT budgets.

In addition, the commission has failed to come up with a clear answer on the participation of

between the IUTs and local ladustry at regional level.

Recently, two other issues have emarged. The first is a new development in the sree of etself appointments, the second, the problems resulting from the overexpansion of the institutes during the early 1970s,

Pert of the deal to gain acceptions for the referms was to offer tenure to some 300 essistent lecturers. This is going to prove more difficult them was at first thought. In Francs, those with five or more years' teaching experience in higher yeors' tooching experience in higher education heve e right to tenure. Research shews that the number of people in line fer permenent posts is fur greater than originally estimated.

mated.

The second problem is more delicete. Meny of the later IUTe, especially in the south and southwest of the centry, owed their development less to educational or to manpewer considerations then to pelitical manoeuvring. To set up en 1UT in a small tewn not only brought considerable financiel benefits, it elso served to keep en

of IUT budgets.

In addition, the commission has faithful to its local deputy.

Seme IUTs in this position suffer from lack of students. Often they answer on the participation of industry in the teaching progremme, Much dependa, it eaid, en the type of subject involved. To set oversil limits would be meaningless.

Now, in an ettempt to break faithful to its local deputy.

Seme IUTs in this position suffer from lack of students. Often they ear in aress with few employment outless for IUT graduetes. The possibility, of closing down cortain departments and redistributing steff end students' elsowisare.

Briton heads energy centre

ance. Both increases would take effect from April 1.

From October 1 the various selfowances deductible from the parental Income after ex and social security contributions (calculated on the basis of the year 1975) before it effecte the lovel of a audent's grant would. clao be increased.

This applies, for example, to the basis of the year of the International border of the Justin Basis of the year of the Justin Basis of the Justin Basis of the year of the Justin Basis of the year of the Justin Basis of the year of the Justin Basis of the J

The academic year has begun in South Africa. Martin Feinstein looks at the troubled future of the country's main White student organization

AMSTERDAM 74,000 students. responsibility at mining an open system of higher education. The Union now widely seen as lame duck

Somb Africa's 70,000 university sta-dents retorned last munth to start at the 1977 academic year. In a changing and uncertain political climate, the division between Blark and White students has widened, t while the ideological gap between White English and Afrikaans seems to be narrowing. tu be narrowing.

sector which are attended by about 74,000 students.

In preparing their reput the commissions looked at the Swedish, American and English open learning models. The Dutch proposal would involve programmes leading to a decelepment, specialist and refresher rourses.

Programmes would be split into separate but inter-related parts with each part lasting not longer than one year. This is to allow students in study just one part of a course, or no allow dear to temporarily drop their studies and pick them up again easily loter.

In some ruses the experience of students would count towards exception from obtaining specific marks in parts of o course.

Final examinations, too, would offer a wide variety of rules. To One Halverstey will be existing controlled the parts of occurse.

Final examinations, too, would offer a wide variety of rules. To One Halverstey will be existing controlled the part lasting specific country variety of rules. To One Halverstey will be existing controlled the part lasting specific country variety of rules. To One Halverstey will be settled to the part lasting specific country variety of rules. To One Halverstey will be settled to the part of the proposal and proposal reput strongly counces intrograms and appears such a structure as being manner expension in lighter education. The reput strongly counces intrograms and interpretations with a structure as being manner so with a structure as being manner so with a structure as being manners ont against such a structure as being manner as the open interpretation of the final country and organization part responsibility in a centry the size of Holland.

The second dodel would give higher education a transfer dentation part responsibility for, say, mastingly counces in the reput strongly counces in the such as tructure as being munical in such a structure as being munical in such of would examine the higher education. The reput strongly counces in the such as tructure as being munical in such as tructure as the reput strongly counces in the proposa The majer development in White student politics has been the fall of the National Union of South African Students (NUSAS) and the enterprise of the property of the students (NUSAS) and the enterprise of the property of the students (NUSAS). existing controllal previsiens shen
ss teaching centres and laberaterice.
The Open University will be
shaped by the already proposed
Open School Development Institute
which is due to be set up in August
1979 and which will censist of multiemergence of a powerful body of offer o wide variety of rholes. To give students fresdom os to how and when they want to study a multi-media system would be used. The emphasis would be en written work, although rodio, televislen, individual and group rounselling would else play an important role. Three organizational models are suggested in the report. The first ene is a decentralized model where by the universities and higher vocational pragrommes.

The open University will be shaped by the aircady proposed Open School Development Institute to the set up in August 1979 and which will censist of multi-media steering groups responsible for developing this new type of colucation.

The report colls for a preporatory committee to be set up as soon os possible to decide omeng other things on necessary legisletion and tiend inetitutes share the entire

right-wing students.
Once the mojor ferce representing English-speaking students, NUSAS is still recling from the effects of a mussive withdrawal of student sappart last year, when four universities (Rhodes, Port Elizobeth, Pletermaritsburg ond Durling) voted in a highly contested referendum to disulfillote from the union, cutting eff same R10,000 in membership funds. At present four compuses remain officied, and referended to held repeat referended to held repeat referended to held repeat referended to student reaction to the sentewhet confus-

reaction to the semewhet confusling cenetitutional changes that
NUSAS has undergone in an
alternative at the democratization of its
leadership. It is unlikely, however,
that NUSAS will regal the support
in through the stalemate the French
many student leaders see as signaling down guidelinas for ceeperation
between the IUTs and local ladustry at regional level.

Recently, two others.

CAPE TOWN financial partition is se bad that university start its boad office has been vacated and it now eperates on campuses

to laosch a national university newspaper, the National Student, failed
infer the first issue due to financial
problems and government harassniom, although un ettempt is being
mads to revive the project on a
chasetting history The union's difficulties have been

mode even mero acuto by the emergeues of e new conservativo unian, the South 'African Federation of English Speoking Students (SAFESS). Although it eeems to invu attracted only morginel support of the English company of the English company. port on English compuses, SAFESS is making hendway in establishing rappars with the powerful pro-government Afrikaanse Studente-bond, which monopolizes Afrikaans student support. The ASB is far mere willing to rapperate with the right-wing SAFESS lesdership than

government.

Even if the universities reaffiliate, it will be a long, herd struggle for a bedy that has net yet rerevered from being declored an Affected Organization in 1974, nurve which barred overseas flarming cial support. In fact, NUSAS's

University legislation pledged as discontent goes on

from Potricio Clough

four or more years, and e rosearch
ROME doctorets for these wauting to emless been bark on an academic egreer.
Moenwhile, e national assembly ef-

ROME
A University Roform Bill has been promised by the end of this month by Signm Franco Marle Maliatti, Education Minister.
Signor Molfetti announced the move to Parliement in the wake of the still simmering student revolt. He said that one of the main clements behind the student unrest. ments behind the student unrest, massive youth unemployment, was a "grave and alerming" problem which reforms alone child not

The promised Reform Bill will be the third to be presented since the 1968 student riots end the fifth in 15 years. It is expected to include e reform of the present one chair faculties into a department system elmilar to that in British Of a completely different tone universities.

The government place to previde work for young people and of any secrifices to combet the ecocomic criels:

Of a completely different tone was a meeting in Turin of life tenure professora who pressed for limits on the numbers of students entering university. One speakar wared that at the present rare one adult Italian in four would seen bever a degree.

students at Rome University has esiled for a day of notionwide demonstrations tomorrow. The essembly, attended by chour 5,000 studeets out of the total of 750,000 was dominated by the extreme groups which are most ective in the current rebellion and who often prevented mere moderate colleagues, including Communists, from speaking.



PRESTRANCE

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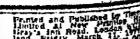
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The Roed to Total Freedont by Roy Wellis Reinemann Educational, £6.50 ISIIN 0 435 829165

Even among unusual therapeutle religious cults, Scientiflogy has attained an exceptional motorloty, for which a sensationalist press sud the litigious livolyements of its own leadarship must bear the princhal

for which s sensationalist press sud the litigious livolyements of its over loadership must bear the principal blame. Thera beyo else been saveral hostile books writton by former members of the movement. Roy Wallis has written a book of quito a different kind, which is not only even-handod and cool-header about so sensational a subject, but which is extremely lucid about subject mattar on which the Scientologists themselves by no means about so chieve by no means about so chieve by no means about so chieve lucidity. If this were slift would be enough to recommend the book, even to erdent Scientologists, who es anot anywhere have seen the theory, organization, and development of the movement so clearly set forth. As it ia, Wallis does much more. He recounts su sbsorbing history of the movement, which makes et timos gripping reading. And he puts the whole into the context of e sociological englysis that not only makes good sense (act an invariable achievoment of socinlogists) but which is elso a positive end important contribution to the existing theorencel opparatus for the enalysis of social movements and religious organizations.

Objective sociological enquiry into any sect is not easy—either for the researcher, who does not want to make his subjects feel like victims, or for the religious movements ond religious organizations.

Objective sociological enquiry into any sect is not easy—either for the researcher, who does not want to make his subjects feel like victims, or for the religious movements ond religious organizations.

Objective sociological enquiry into any sect is not easy—either for the researcher, who does not want to make his subjects feel like victims, or for the religious movements on the such studies ere always delicate, and e measura of goodwill on both sides is easential if distortion is to be avoided.

In studying the Scientologists, Wellis ecrtainly hod more tism

into any sect is not easy—cither for the researcher, who does not want to make his subjects feel like victims, occite the religious movement itself, the entire worldview of which is foshioned by very different volues in contour the sociologist. The relocionships evising in such studies are always delicate, and a measure of goodwift on both sides it essential it distortion is to be avoided.

The movement his because Scientologists, well as extrainly had more this around difficulties. Scientologists, and established Sciented points and human froedom in which psychiatrists und communists in particular, and somstimes politicians, journoles, the police, and well as the police, and well as extrainly of the future of western levilization, which is throstened by conspirate the process of the future of western levilization, which is throstened by conspirate and somstimes politicians, journoles, the police, and well as expected and the provest is thus a ready object of suspector, and communists in particular, and somstimes politicians, journoles, the police, and the harrownext is thus a ready object of suspector, and communists in particular, and somstimes politicians, journoles, the police, and the harrownext is thus a ready object of suspection, and content to the original politicians, journoles, and the partownext is the writers of other books that the such as the politic miter of the politic miter o



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norrower theme, Ryder hes provided a rounded ond absorbing account of the original and successful approach to government adopted by occ of the great rulers of the fifteenth

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Astride the Channel

The Norman Empire by Juhn Le Potourel Clarendon Press: Oxford University Press, £15.00 ISBN 0-19-822525-3

invental experience in provious hat causes in mortal, o thetan, was horn individual therap with these limitations. Belging, and its tech, as a case of the second the offices are record for patients, precious, for the official set, therapy (or trailegt, thera



from Napleo. Alfonso rightly calculated that the gratitude of the nobles would be displayed in the Ncapobitan parliaments, and thet he could he sure of their contribution to the tax burden (which, in any case, fell very largely on the shoulders of their own vassels). Since, moreover, Alfonso was prepared to relate the great princes were not particularly onerous. The prime duty was, indeed, an ebstract one loyalty, Alfonso, for his part, was prepared to employ conductieri—the femous Frederico di Mootefeltro marched in his renks.

The cohereoce of Ryder's picture

Trom the royal castle of Naploa.

By en his chapter on provincial government is uklimately concerned with relatiops between the central offices of stato activities, economic developoicnts or foreign policy. Thus the crown's use of bankers is discussed, but not their function to the south Italian economy. Little is said about the othor part to employ condottieri—the femous foreign policy. Thus the crown's use of bankers is discussed, but not their function to the south Italian economy. Little is said about the othor part to employ condottieri—the femous function to the relatiops between the central offices of state of the gouth Italian provers of bankers is discussed, but not their function to the south Italian resims. Sicily; but outh more is said, of necessity, about Aragon, which supplies to the relation to the relation to the south Italian resims. Sicily; but outh more is said, of necessity, about Aragon, which supplies to the relation to the relation to the south Italian provers of bankers is discussed, but not their foreign policy. Thus the cromos activities, economic developoicnts of bankers is discussed, but not their foreign policy. Thus the cromos activities, economic developoicnts of bankers is discussed, but not thei

Seeds of change

The Economy of England 1450-1750 by D. C. Coleman Oxford University Press, £3.75 and ISHN 0 19 215355 2 and 289070 0

the as yet unpublished sparegative with of the cheagues in the Cambridge Group for the History of Papulation and Social Structure, he has chosen to break his 300-year period in the mid-seventeenth century, a tuning-point which divides a long, if accasionally interrupted, sub-period of population growth from a shorter one of virtual stagnation.

In the first sub-period the slow recovery of population growth after

Origioally published in two volumes The Victorian City hos boso neknowledged as the sominal work for the understanding of the urban peat end prosent. Unique in its many-sided opproach to the total phenomenon of the city, the wock encompasses not only what took place, but what people thought about it and themselves as it heppened. Michael Rateliffor and themselves as it heppened. about it and themselves as it heppened. Michael Ratcliffo reviewing the two-volume edition in The Times commented: "It is a magnificent and thrilling exploration; pect orchaeology, part alchemy, pert detective foct and part something very like extrasensory perception, for just beneath its 970 peges, 35 stricles, 434 stunningly presented photographs and clegont typefact shimmers a sense of teeming life that will railically chift their view of the nineteenth century for onyone who reads it."

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Social Anthropology end Medicinc edited by J. B. Loudon Academic Press, £7.00 ISBN 0 12 456350 3

at the 1972 annual conference of Social Anthropologists. Itie rainer lengthy interval before publication has not been an idie period eli but two having been revised by the authors of collaboration by the two having been an affe period, edi but two having been an affe period, edi but two having been revised by the authors, in collaboration with the editor. This has had the effect of deliberately emphasizing certain themes, namely concepts of health and, blass 1 fine diversity of idealing the same with the same with the two periods of the control of t keen oppreciation of the practical newige means literally "He will need to treating common compleints, in any location."

Africa and it Britam, end retains everile further afflictions: the word to newige means literally "He will need treating to the daily routed in the daily routed in the daily routed in the daily routed in the new second of pain and are raised in the presence of pain and are raised in the new second of pain and are raised in

Flacating the spirits and healing the sick

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cer, her respondents wore less prone

Town Plenoing and Pollution Canby Christopher Wood Menchester University Press, £7.95 ISBN 0-7190-0635-X

Planeing for Public Transport by Peter R. Wbite Hulchinson Educational, £5.95 and

All three books deal with major plenning issues, but although they all reflect the atete of the planning process and cast light on its deficiencies, they are very different in elio. One is purely educational, two relate directly to practical issues.

Town Planning and Polintion Control ds the third book in a series dealing with pollution in which the author sets himself the very specific task of relating policies to problems. With no preamble his opening chapter poses four questions: what is the role of planning in pollution control? What powers affective? Are the existing powers sufficient to the existing powers sufficient to meet the chellenge? Are the techniques eveilable to implement the

niques eveilable to implement the planting response?

The bulk of the text is an exemination of all espects of planting which bave e bearing on these questions, ranging through a comprehensive reminder of types of pollution and discussing organizational response. This pert is strengthened by ease-studies which exemine the prublems on a regionel and arban level contexts in which airport planning is conceived.

Just es an international style is no longer valld, so the essumption that there can be on international approach to planning is demolished in view of the different planning philosophies of mojor air powers. The belief in economic criterio and faith in trends does not stand up lems on a regionel and urban level es well as of structure-plan stage; and the whole is admirably refer-

enced.

A finel chapter answers the initial questions in the light of the evidence, and pinpioints the areas where there is lack of knowledge of deficient appreciation of techniques or where existing powers are not sufficiently expluited, it ends with a series of recommend. ends with a series of recommenda-tions to meet the deficiencies. The unolysis is a usoful critical review of the existing almostical review of the existing situation, but the sudior does not go beyond the existing tacbulcal or organizational

Plouning for Public Tronsport Is the latest in the Hutchinson series of toxts on the built environment, meny of which ere proving plantioble basic texts for college teaching. The book is moshamelly almed at the student, though it will be useful for professional workers and is written in a streightforward manner which will be rendly understood by the layman who wants an introduction to this field.

The opening chapter plunges uncompromisingly into the relevant Acts of Parliamout and into the organization of the major operators of public transport. The enthor then Plouning for Public Tronsport Is

organization of the major operators of public transport. The enthor thon deals with the role of public transport, an onalysis of bus and coach and repld transit systems, pricing and costing, and the special problems of rurol transport. The book is well handled and urganized, dealing with all the relevant technical with all the relevant technical

Human factors

to find so much emphasis on the seclarical side, an costs, an distance and on time. The wards "sorial service " are conspicuously absent from the index, and ane cannot help feeling that people have been largely forgatten. The word largely forgatten. The word "public" is in the title but is it no more than a device to indicate

siting, as in the third London air-port. There is a desperate need for understanding individual prefer-ences, social values and the cultural contexts in which airport planning

foldy in trends does not stand up to the fects. International con-

to the fects. International con-sensus is no longer relevant. The whole problem-must be seen from the public viewpoint. What kind of solution is the community entitled

Fullehinson Educationel, £5.95 and £3.25 (and £3.25) and £3.25 (but we are not dealing with private transport? There is no indication that "public" means mee and the women and ehildren, different needs. Only on the fact two pages are issues reised which might have solightened the whalo argument, end even here such as the planning process and cast light on its deficiencies, they are very different in shoot. One is purely educational, two relate directly to precical issues.

"public" is in the time one is it indicate that mo more than a device ta indicate that indicate that we are not dealing with private transport? There is no indication that "public" means mee and endition and that "public" means mee and ehildren, different needs. Only on the street was pages are issues reised about the European Community of about the European Community of interest the ending of the planning process and cast light on its deficiency of the planning of the planni Fortunately this is something which loams much larger in Airport Systems Planning. The author begins by pointing ant that the emphasis on technicel end economic considerations in isolation has led to prablems which necessitate radicelly new thinking. We have entered o period when less effort needs to be devoted to detailed design and more ettention needs to be pleced more ettention needs to be pleeed on planning the integration of these facilities with the social system. The limits of e technological appraised are seen not only in the fallure of airport design, but in our inability to find setisfactary political solutions to problems of eirpart siting, as in the third London airport. There is a despendence of services and seed for

BOOKS

Regional planning in the EEC

able introduction in studies at higher levels.

The most ananying type of reviewer is one who describes the brok he would ideally have seen written, rather than what is in fact before him. Yet some gaps, obeling the common to the state important questions. It is true that geographers "are particularly interested in spanial presenting in the ure they then excused from presenting mexplanation", introure they then excused from presenting mexplanation in terms of "the economic mechanisms that produce such regional differences"? Ought and even the intelligent sixth former he made award that men like he we studied that he beard that he former he made former he made award that men like former he made award that me

Few major reputations rest on water properties tries of little: just one movel, and a water properties tries of little: just one movel, and a water properties tries of the fragmentary, wholly lyric to relate to each other, to the navel, and to what little we know from called the season of the writer. The one factor of the season is the factor of the season of both name

A poet on impulse the poetry to illuminate the novel, or the novel to explain obscurities in the poems.

random comments, which he has the horizontal many to call "A Personal Response"—a title which is its own

Robin Grove is probably right in stating firmly that high clams should not be made for her poetry, if by that he areaus he would not

The odd fucts—among many—are that Emily Broate seems to have written maetry by impolse and compulsion years before she wrote her only novel, and, while the novel is burd to foult, the paems heve all sorts of injevennesses, wherein, to quote Barbara Harrly again "most quote Barbara Harrly again "mast residers have their awn authalogy of lyrical fragments filched from had verse". Few can disagree with her conclusion that her poetry has lapses, that its phreses are weak, often conventional, and yet that she can at her best muster more intensity then greater masters of language.

Response — a title which is its own carpit. At the letter end are more in stating firmly that high claims shauld not be made for her poenty, if by that he means he would not put her in the first rank. Hawhara Hardy is even more cogent in the general point that "the act of writing verse is sufficiently digital from that of serting proce to writing verse is sufficiently digital from being poets as well", and citing Swift and Scott as the only exceptions before Emily Brantë.

The odd fucts—among many—are that Emily Brontë seems to have written paetry by impulse and cumtwo main nerrators Ellen Dean and Lockwood, which makes same very add statements indeed, such os thet Ellen is "the most fully-drawn completa human being in the navel—or possibly in ony navel, for that matter".

The collection may perform o ser-The collection may perfarm o service, but for the student or general reader wha wishes for a compact selection of diffarent approaches to Wuthering Heights, this one cannot vie with ian Gregor's collection of Twentieth-Century Views. At the least, though, it may provake hieas of his awn in the reader, and cauld teka so its epigroph Ellen Dean's own wry remark: "You'll judge, es well es I can, all these things: at least, you'll thiak you will, and that's the same" (chapter XVII).

W. A. Craik

Shakespeare the imitator

Professors Masser end Chatterin have efficient in confirme to propers. Although the field of regional problems in developing and contains a kalcidoscopic variety of papers. Although the file in the result of a symposium lend in 1974 at Near York State University and contains a kalcidoscopic variety of papers. Although 198 and the spans of papers and contains a kalcidoscopic variety of papers. Although the leithorial of the papers of the contours of the papers and contains a kalcidoscopic variety of papers. Although the elihorial of the papers of papers. Although the elihorial of the papers of papers and papers of papers. Although the elihorial of the papers of papers and papers of papers and papers of papers. Although the elihorial of regional problems in developing countries this theme is not strongly reflected in the 19 not strongly reflected to reflect the test and linear at the papers which reflected in the 19 not strongly reflected in the

Influence in this now well-charted territory? Emrys Jones finde that:

"All the examt Greek tragedies (of Eurlpides) were made evailable in editions end in Latin translations during the sixteenth century, so there is no question but that they would have been accessible to any the seventeenth century."

etely, from the Hecuha, of Euripides", eed by the eed of thot chapter where we have Shokespeere "imitatiog Euripides" and "ineugureting a styla (in the Julius Caesor querrel that was not fully exploited until the seventeenth century." during the sixteenth century, so there is no question but that they would have been accessible to anyone with mot much more then emoderate reading ebility in Letiu." This is certainly en important piece of informetion to bring to our reading of the trogadies and to help us to understand how Shekespeere's contemporeriae read tham. But what Jones goes on to note is thet "Titus Andronicus consiste of two movements of feeling, the first dominated by possionate suffering, tha second by purposeful revenge", and thet the Hecuba of Eurlpides else falls into two auch parts, "What emerges for a reader of Shokespeere le the closo resamblenca of its form [the Hecuba] to that of Titus, both heving an action divisible into two parts, the first dominated by grief, the second by revenge, in both the transition from first to second part being similarly rapid and decisive". By the next chepter we beve, "the basic form of Titus Andronicus was derived, either directly or madi-

the seventeenth century".

The Hecuba (in Latin trenslation)
was en Elizabethan best-seller. This
expleins the frequent direct ellusloas to Hecubo es e figura for
grief in Shakespeere (Titus Andronicus I.i and IV.i, os Ennrys Jones
indicetes). But did Shakespeare
reelly need Eurlpides to suggest to
him tha "two movements of feeling" in Titus?

Ascham said that the ideal for

Masters of melodrama

The Melodramatic Imagination : Calzoc, Genry James, Melodrama and the Mode of Excess by Peter Heooks

Yale University Press, £9,91 ISBN 0 309 02001 5

draom has begun to be regarded as worthy of critical study, it is still

art, but the author goes further, art, but the author goes further, ond claims that "the meladramatic mode can be seen as an intensified, primary, end exemplery version of what the most ambitious art, alnot the beginnings of Romauticism, has been about", nemely, "uncovering, demonstrating, and meking operative the ossential more) universe in the classic of Lauis eck, us well as Beussis or Lauis eck, us well as Beussis eck, us well as Beussis or Lauis eck, us well as Beussis or Lauis eck, us well as Beussis or Lauis eck, us well as Beussis eck, us well as Beussis eck, us well as Beussis ec tive the ossential morol universe in post-secred ore ".

The death of tragedy in the posi-tivistic world of the nloeteenth centwistic world of the nloeteenth century was perelicied, suggests Brooks, by the rise of melodrame, which was to become "an anduring mode of the modern imagination". Romentic drama mey appear, in France, at early rate, to be the form in whith the melodramatic most obviously sought more embitious literary expression; but the Romantic titemselves recognized, Brooks cleims, that the theatre, with its material contingencies of time and space, was bound to be too restricting e medium for "a drama of the moral occult, the closh of grandlose forces". It is to the novel, therefore. forces ". It is to the novel, therofore, that he looks for the ninetcenth contury's most creative handling of the

Ascham seid that the ideal for Renaissance imitation was "similer treatment of dissimilar meteriel" and "dissimilar treatment of similar materiel". If you were a good imitetor, in other words, you covered your tracks. If we are going to make profiteble use of materiel such as Emrys Jones brings to our attention we are going to have to decide on our own codes of practico for uncovering them.

Lisa Jardine

tury's most creative handling of the melodramatic in the melodramatic in melodramatic in melodramatic in melodramatic in melodramatic in the melodramatic in melodram

insistence on the dramatic sentantic putential of all our actions". Every Balvic reader will be able to fill in that untline, providing examples from his own experience of the

Paradoxically, It is Brooks's own analysis of a selected example, Le Pere Guiot, that raises certain doubts. On page 135, for instance, he uses the terms "Manichaeistic", and "Manichaeistic", manually seem as a popular generate remains and inferior to—
separate from—and inferior to—
dromatle or fletianal writing. Professor Brooks sets out to treat the meladrematic mode seriously, to rescue it from its pejorative comonutions, and to give it o more central place in artistic creation.

Chapter and contains the best pages I know an melodromat's pages I know an melodrum's and passive; and as with Cornelle's essential nature. Not only is thu cancept shown to be vital to any real understanding of Romantic art, but the author goes further,

The idectity of the other chosen exompler will surprise some reeders: Henry Jemes, whose psychological subtlety and festidiousness of

But in spite of the transformation that the meledramatic mode has undergoee of Jemes's hands — ond eithough with Jemes the author seems daliberately to have chosen on extreme test-case, rether then the more streightforward examples of Dickons or Dostoevsky, whom he rites in pessing — there is a most satisfying unity to the book. We are unlikely to necept passivoly everything the author says, but like all the best comporatistes, he opens up stimulating more recorded.

W. D. Howarth

THAORYM Range diomediate impression is the agreed ionnediate impression is the power ond passion of both paens and novel. Interpretation is a guege. Sign different matter. This callection of the poems are the most original and the most usaful, yet this bouk will be bought—or more likely borrowed iron libraries as usual, that it is difficult to evoid a unit Children predefine constant comparison and cross and the impulse to use unit through predefine reference, and the impulse to use unit through the properties of the poems are the most original and the most usaful, yet this bouk will be bought—or more likely borrowed iron libraries on the novel. This is a mixed bug, with at one extreme Colio Wilson's unit through the properties of the properties o

Mortin Waldscemulier's woodcut version of the Greet Khan of the Tarlars appears on his Cata En ISBN. 0 19 812080 X 1516—a map drewn largely from Portugueso chorts. But for the certugraphy of China and Mossoul the Greet Khan slis), see charls were useless us most of the information was drawn from reasonable in 1298. From Luminiants of Mapmaking by R. V. Taoley and Charle awareness of a commonplace cultural and educational tradition belond. Shakespeare's plays (Shakespeare's Small Lumine and Lesse Greke, 1944). Over the course of those thirty years we have gradu-

The positivist tradition

to expect, and within what constraints?

The anthor deals with the difficulty of forecasting growth and the rigidity of the outcomes. He coils for e review of methods of farecasting, fur e withening of the band of possibilities, using cheoper models, having contingency plans for edaptation. New strategies unist ellow for uncertainty and sano degree of open-endedness in which decision onalysis could play a part. The author also makes a strong ploo for planning any airport within a totel system. There is a healthy questioning of the assumptions systems feeding airports from city centres, and again the user is given often overlooked in planning entors from clay centres, and again the user is given often overlooked in planning entors of the system. Similarly the nuttior claims that human fectors era the often overlooked in planning entors mulion, for example, in baggoge handling. Time and egain difficulties erise where technicel efficiency meshes with human behaviour, and primocy must be given to the lotter. The argumens are cumulative and cunvincing. Technological advance will not serve the community in the bast way until it accommodities the raried, colural demands and interest of the strain of the colors of the strain of the color of

of normalized support. The book marked feels in the control of the

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Tha National Culteries of Scotland Annual Report for 1975 published by HMSO at £1.00 reports on the octivities of the galleries throughout

BFI money

Production Board edited by Alau Lovoll, the latest British Film Institute publication, includes a chapter on funding bodics and funding procedura in relation to independent film-moking, interviews with current members of the production board salction committee and the results of a quosilonnaire to film-mokers about their dealings with the board when making their films. Available from the BFI, 81 Dean Street, London W1, It costs 70p.

Critical edition

The Autumn 1976 edition of Agenda The Autumn 1976 edition of Agenda ie a special Issue on criticism with contributions from Michael Alexander, Bernard Bergonzl, C. Il. Sleson and others. A selection of moems by Osip Mandelstam and articles on the poetry of Thomas Hardy and Philip Larkin are also lucluded and copies con be obtained of 75p from Agendo Editions, 5 Cranbourue Court, Albert Bridge Road, Landon RW 145P.

Giving advice

Advice to a Young Post by Mox Jacob, translated from the French by John Adlard le published Menard Press at 75p to coincide with the centenery of Jacob's birth In 1876. The hook is completed by a preface by Edmond Jabes and an afterword by the "young poet", Jacques Evrard.

Librarianship

Prospects for British Librarianship, edited by K. C. Harrison Is a Library Association Centenary volume in which the contributors attempt to predict the future dayelopments and problems in their respective professional fields. It costs £6.50 (£5.20 to mambers) and is available from the Publicetions Department, The Library Association, 7 Ridgmount Street, London WCIE 7AE.

Founders of quantum physics

Early History of Planck's Radiation Law by Huns Knugra Tuylor & Francis, £25.00 tSBN 0 850G6 0637

Niris Balay, callected warks, volume 3: The Correspondence Principle (1918-1923) (1918-1925) ediled by L. Rusenfeld and J. R. Nielson Elecvier, \$105.95 15BN 0 7204 1803 8

Physikalisch-Technische Reichsen-sudt, which ultimately provided reliable information alam the radia-tion from budies of known tempera-ture. And 1900 was the year when the key workers in the field decided that the discrepancies between this information and the name previously proposed reliation netween this information and the namy previously proposed rediction laws were significant. Further theoretical effort was needed. When Max Planck produced his new radiation formula, building on his own efforts of many years, the fit botween It and the observational data was satisfactory. The realization that a new intellectual epoch had downed with the new century

in find a satisfactory general foundation for quantum theory; D is not history, but the raw uniterial of history, a quarry for historians and idilisophers of science. An excellent 45-page commentary by Professor Nielsen introduces 22 papers, lectures, drafts, and unused page proofs, but almost 190 pages of selected correspondence.

Repeatedly, the commentary and the correspondence remaind as of

Banking

The Bonks and Industry, intiblished by the Institute of Bankierr of £2.00 contains four papers read at the seminar held at Christ's College, Cambridge, in September 1976 on the problems of company linance and industrial investment, and the embraciant and industrial investment, and the embrace and case studies used at the embrace of striking reminder af how and district as scientific—the acceptance will be accepted myths have become.

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Prafessor Kangra traces in painting of the mineteenth pocuments in PROMI has been compiled by P. J. C. Radeliffe at the Public Record Office in Nurthern Ireland to Indicate areas where composition of official records on Northern Ireland to Indicate areas where composition of official records on Northern Ireland double and of series of workers in the number of the indicatement of the indicatement of the content of the indicatement of the indica

The liquid state

Madern Theory of Critical Phenicby Shaug-Keng Ma W. A. Henjanda, \$14.50

Our real understanding of the critical region of liquids began with van der Waals's wark in 1873 and our understanding of critical phenomenoin in magnets began with the work of Curtas and Wales. Unfortunately these "mean-field" theorics give quite wrong values of the "critical exponents" that describe the results at measurements of, for oxample, the topessure as a function 1975, their purchases, including the Varocchio Madonna oud Child, and the difficultias which they entitine hourhand of the critical paint.

hesitute to idupoint errors, apparent inconsistencies and other difficulties but skilfully avoids onlything resembling polemics or personalities. Much of the material has hitherto only been necessible in original jupers and conference reparts, and the author's "ranning commentary" on a rapidly developing field should be very valuable both to prospective prockers and to scientists. anctive workers and in scientists ond engineers, concorned, as so many of them ora, with various asperts of the liquid state and its phase changes.

phase changes.

Ideally, a scientific account should start with the facts, should expound the theory and then discuss objections. The last two things are done extremely well fact the account of the exterimental facts is sketchy and superficial. Experimental details would have been out of place, but one would like to have seen how the scatter of experimental padats changes as one approaches.

burgh;

W. D. Howarth is professor of classical French literature at the Uni.

Reyon Wilson is reader in sociology at the University of Oxford and fellow of All Souls; he is physica, st. University, of and The Noble Savagee.

A classic

Electricity and Magnetism, 3rct colling by It. I. Blenney and H. Hlenney

Oxford University Bress, £17.50 and £9.95 tSBN 0-19-851140X mid 851141-8

Fig. naily years, teachers of chectricity and magnetism have been while the present their own personal selection of ighat is interesting and important in the subject, knowing that they can fill the gaps by referring the student to library and theaney for the toll story. Now with the publication of a third edition, we can do this with renewed confidence that the full story is not only authorizative but also up to date.

Comparing the new offices with

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M. W. Finn is professor of social history at the University of Sussex; and Ilterature et the University of Nottingham is outhor of Bayeux Tapastry and the Norman burgh;

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W. D. Howarth is professor of classical French literature at the University of Norman ions wersity of Bristol;

Bryon Wilson is reader in sociology at the University of Oxford and fellow of All Souls; he is professor of french literature at the University of Oxford and fellow of All Souls; he is professor of sections on an analysis of the Sections on applied maths at the University of College of Swaosez; These changes have modified the descursive widness such as whole, suggested that it now contains a higher professor. Thus become and Tho luvesion; and the University of Norman literature at the University of Oxford and fellow of All Souls; he is professor of French literature at the University of Oxford and fellow of All Souls; he is professor of French literature at the University of Oxford and fellow of All Souls; he is professor of French literature at the University of Oxford and fellow of All Souls; he is professor of French literature at the University of Oxford and fellow of All Souls; he is professor of French literature at the University of Oxford and fellow of All Souls; he is professor of French literature at the University of Oxford and fellow of All Souls; he is professor of French literature at the University of Oxford and fellow of All Souls; he is professor of French literature at the University of Oxford and fellow of All Souls; he is professor of French literature at the University of Oxford and fellow o

How social groups happen

The behaviourist contribution (Wheldall's volume) is written from such a purcely psychological rieupoint that the michor appears to be entirely oblivinus af the sucial behaviourism of G. H. Mead. Ironically it is part of Wheldall's self. description that "... his special increases are language and communication, and social behaviourism". Yet there is not a single reference to symbolic interactionism in the entire volume. The pity is that which will be control in postance be attaches both to lunding and hence give description is behaviourist even to symbolic of a sense narrowly hence havioural (far example, the control induction and hence give described and hence give described and hence give described and hence give described and hence in resistance to persuasion and their restauctions and hence give described and hence give described and hence give described and hence and hence give described and hence in resistance to persuasion and their restauctions and simulating. Their coverage and attention.

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Issues in occupational psychology

Memory for mnemonics

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forgetting.
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control processes deals with those
activities which the individual
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M. M. Gruncherg

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THE TIMES HIGHER EDUCATION SUPPLEMENT 11.3.77

Polytechnics continued

Pruduction

Degree proposuls.

ULSTER COLLEGE

Faculty of Husiness Administration

THE NORTHERN IRELAND POLYTECHNIC

SENIOR LECTURER-ilotei and Institutional

To act as subject team leader for fued studies and play a leading role in the development of the new

Aspects of Food/Accollimodation Stimes
To teach in the Higher National Diploma in Hutel
and Catering Administration and the Higher
National Diploma in Institutional Management and
to develop this work to Degree level.
The successful candidate will be expected in teach
at Degree and Diploma Standard in one at more of
the following areas. Final Production, Service of
Food and Drink, Reception, Accommodation Studies.
Applicants should have appropriate academic or
mofessional analifications and relevant infustrial

professional qualifications and relevant industrial experience in the field of those Catering and Insti-

julional Management.
Teaching and research experience would be an

Applicants must have an Honours Degree in Law and an embhasiasm for teaching. In addition, some of the following would be on advantage (a) A higher degree and research experience; (b) Professional qualification and experience; (c) Teaching and

LECTURER II-Management Accountancy

LECTURER II-Finoncial Accountoncy

Faculty of Social and Hesith Sciences

LECTURER I or LECTURER II

Applicants should have on honours degree and/or be a qualified ACMA/ACA/ACCA with an enthus-

Applicants should have on honours degree and/or be a qualified ACMA/ACA/ACCA/IPFA; ACIS with

(b) Occupational Therapy
Applications are invited from chartered physiotherapists and occupational therapists to teach an Diploma and Degree courses. Applicants should have had several years' experience in the clinical field and preferably hold a degree or teaching qualification. In the event of the successful applicants not hadding a leaching qualification they would be expected to take the In-Service Certificate in Education (Further Education) course of the Polytechnic: successful applicants and holding a degree would be encouraged to pursue qualifications by part-time study. The appaintment will be made at a point appropriate to the applicants' experience and qualifications.

Applicants shauld have a knawledge and understanding of the principles, factors and requirements which influence the design and construction of buildings together with a materia approach to the practical production and construction processes involved and be graduates or a mamber of a professional institution associated with the construction industry.

Salary scole: Senior Lecturer: £5,031-£5,955/£6,417. Lecturer II: £3,279-£5,493 Lacturer I: £2,469-£4,377.

pus overlooking the sea at Inrdanstown, a pleasant and quiet residential area. There is a scheme of

Further particulars and application forms which must be returned by March 31 (April 28 for Physicherapy appointment) may be obtained by relephoning Whiteabbey (0231) 65131, extension 2243, or by writing to:

All points on scales subject to £312 supplement. The Polytechnic is a direct grant institution with an independent Board of Geverners. It opened in 1971 and not has a student population of some 6,100. It has extensive new purpose-built accommodation, including 750 residential places on the 114 acre cam-

LECTURER II-Building Technology

SENIOR LECTURER-Law

course development experience.

an enthusiasm for leaching.

(b) Occupational Therapy

lasm fur reachling.

(a) Physiolherapy

Faculty of Technology

assistance with removal.

Operations with particular reference to Food

LECTURER II-Theoretical and Practical

Aspects of Food/Accommodation Studies

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Universities continued THE PERSON NAMED IN COLUMN THE OPEN UNIVERSITY

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Fellowships

BIRMINGHAM THE UNIVERSITY OF ASTON JAMER WATT THAVELLING

telephone Gilliapora (1990), 452.
Applications, in the form of a curriculum vilue, including the minima hid addresses of two federees, should in sent to the south addresses by April

Adult Education

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GWYNEDD

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THEOR IN -PHILLDSOPHY

Applications are inclined for the district post. Applicants about the undistrict will a wood homing deeper, Salary on the scale £5,33,50,66,675 with assumation hereits.

Further particulars and application form term the Registrar, Coing the Application form the Property of the 20th Cosing dale for applications 28 March 2077.

General Vacancies

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THE HEALTH EDUCATION COUNCIL **FELLOWSHIPS**

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SUBREY THE ULIVERSITY THE WELLCOME TRUST DEPARTMENT OF LCONOMICS

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The Welicome Trustees are willing to consider thous for grants from pust-dictoral infortant grantacts of lirilish the twestiles, holding pointers sity departments and actively engaged to lower the second pointers are understanted in the history of multivitial grants of up to £10,000 for a period of two years may be made for the provision of an icaye, to undertake a specific project. Such lower the undertaked in the roudhiato's now department a heatthm approved by the Trustees.

Applicants are usked to put forward their carlicter of not tunner than two following pages, A continue and the momes of two referees must so yield. A noure detailed statement may be reflect the Trustices have under a prefinitary sensitive wellcome frost that two referees must so the Wellcome Institute for the listery of Medical several method bistory units in universider. The last other schemes for the provision of another and a limited number of training scholarships and a limited number of training scholarships and a limited number of training scholarships and a limited for the provision of smallers in the provising that for applications is Meanly and a limited number of training scholarships and ships.

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The Assistant Director (History of Medicing The Wellcome Trust 1 Park Square West, London NYI (L)

Polytechnics



HEAD OF SCHOOL OF BUILDING

Selary Scolo: £7,787-£8,913 The School of Building Includes the disc, of Architecture, Building and Environment

Candidates for this post should have se Oxposioned of leaching, curriculum develops and tosuorch in an inciliation of bigher to lion. and possess professionel qualification

nn appropriate disciplins.
The School is contained to the center of seadwich comes and the successful sex will be required to matchin and tests to will be required to milding and test as the will industry, and outport the protest activities at local branch and national less. The Polyinchule is a filined grant less willing an inchappendant Board of Goward append in 1971 and now has a student polying of some 6,100. If has expensive services the inchestive accommodation, includes a service of the inchestical accommodation, includes a service of the inchestical accommodation. realdential pinces on the 114 and and controlled in the controlled

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Further porticulars and application forms must be rolumed by March 20 may be old the by telephoning Whileobboy (0231) \$5131. 2243, or by writing to :

The Establishment Officer, Ulster Color The Northorn Iteland Polytechnic, Newtownabbey, Co. Antrim, B137 (0)

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Temporary Lecturer-Senior Lectureship in Mammalian Physiology

(f3,591-16,729 p.s., under review) for 1 sees of 1 Establishment Officer, Ulster College, The ber, 1977, to 31 August, 1978.
Further Information and application forms to 10 wing the Lownship, co Antrim BT37 0QB.

Lownship, 11 and 1 Biology, Oxford Postulation forms to 10 wing the names of 3 referees, should be 28 March, 1977.

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LONDON SHEFFIELD CITY STUDIES OF SOCIAL FACULTY OF POLITICAL

HEAD OF DEPT. of CHEMICAL ENGINEERING (Grade V)

A young, highly qualified [preferably Ph.D). professional Chemical Engineer with a good research record, is required to lead an enthusiattic toam in degree teaching, postgreduete courses enil research. Condidates should be oblo organisers, and

The Polysochric is creating a limited number of PROFESSORSHIPS for acedemics of eminance who nicel certain critaria. This

Salary within the scale E7,396 to £0,271 pluc E312 supplement per annum.

The Oirector, Yeesside Polytechais, Middlechrough Claveland TS1 3BA, returnable within 14 days.

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In Sculpture

Applications are invited from artists of distinction with considerable teaching experience and with good acodeted quadifications in Fine Art. The preson appointed will provide academic leaderwisp within the BA Fine Art (Sculpture) course and will undertake coordinating and administrative responsibilities. Applicants must be sympotic to a wide range of work and knowledgesble in a variety of processes, abore this Deportation sympositis students, "Individual development in stany areas of creative, spatial experience and activity. Salary Scale: 18.153-18,054 (bor)-

THE POLYTECHNIC HUDDERSFIELD Department of Geography

ACA/121/122

Applications are invited from young graduates with interests in Physical Geography aspectably Hydrology and Applied Olimpioty, or Environmental Percapiton/Sphavioural Geography, and ospacially Sottleman Geography. Appointments will be made to the Lecturer it scale with progression to the St. acate under the lerme a) the Sunham Report. Selecy : Lil £2.279-£8.493 SL £5.031-£5.955 (bar]. 26.417. pjus £312 supplement.

Further delails and application laims, which should be reluted by March 25, 1977, from the Selebilshment Olico, The Poly-lechoic, Oucengale, Hudders-teld, HOI 3011 [Talephone 0484, 22288, ext. 2224].

successful applicant for this post may be eligible to apply.

POLYTECHNIC

LECTURER

Department of Alechonical and Production Linguiserin

IN FLUID MECHANICS/ THERMIDYNAMICS

Required to teach at Degree level and contribute to the department's research programme. Applicants should be higher degree or have appropriate influstrial experience, Experience ut the application of therma-fluid principles to Plant Design would be advantageous.

Salary scale: Lecturer II £3,591-£5,805.

Application forms and lur-ther details obtainable from the Persunnel Officer, Shef-field City Polytechnic, Hol-fords House, Fitzalan Square, Shelfield S1 2BB, to whom completed forms should be returned as soon as possible.

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THAMES POLYTECHNIC

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DIVISION OF BEDGRAPHY

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DEPARTMENT OF SOCIAL LICTUREN IN SENIOR WORK

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Application forms and turting artifulors are available from the Stalline Section. Toesdon Polytechnic, Horough Inend, Addicatorouch, Clevelend TSI 88

> Colleges of Further Education

> > HARPER ADAMS AGRICULTURAL COLLEGE NEWPORT, SHROPSHIRE

LECTURER GRADE 2

Vacancy from Santember 1977. In Agricultural Department Dutice to include legituring 1 H.M.O. Agricultural Marketing an Susinges Administration Courseld other Agricultural occuration of the Agricultural occuration occurrence of the Agricultural occurrence of the Agricultural occurrence occurren

Garnett College

Advanced Courses of Study in **Further Education**

Masters Degree (in Education)

University of London

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One year full-time or three years' part-time study. Relates the study of further estimation in contemporary educational theory and to current social, political unit communic developments. Students can further specialise in Psychology, Saciology, Philasophy, Educational Technology, Historical and Contemporary Studies, Educational Administration and Management, Aspects of Chanselling, Comparative Education, etc. is recognised by universities as a 'qualifying' examination for courses for higher degrees for both graduates and non-graduates. Candidates should have reasonably substantial teaching ar administrative experience in further education, administration or industrial training.

Three or four years' part-time study. Extends the educational studies of the Certificate in Education course, Prepares candidates for further sludy and research in further education. Candidates should be serving teachers with an initial teaching qualification and a minimum of two years' experience.

ABBRYSTWYTH THE UNIVERSETTY COLLEGE

INTERNATIONAL POLITICS The department of INTER-NATIONAL PULLTICE offers two courses:

STRATEGIC STUDICS

A study of the military vincension of Alalectal, residence of Alalectal was a stance, other case, and the Italiany of otraigic dues, and the Italiany of otraigic dues, residence of the Italian of Alalectal Cantumy An anolysis of the major tronds in littlish foreign policy once 1900, with calculations on Anolo-American policy of the Case, and the Case of the Case o relations, thillols and Bitcopean injugariles, and Brillsh deleaned pointy.

The Courses extend over two two numbers and load to the digree of M.Sc. Ecce. Examination consists of three papers and a month following the second further deletion with a consist of the maintains softlics. The University College of Woles, Aberystwyth. (Tel. 1970, 3:111.

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Colleges of Higher Education

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INDUSTRUAL ENGINEERS
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ACAUCMIC APPOINTMENTS Applications or invited for academic goalilons in the lei-

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liave a modern approach to Chemical Engineering and a broad technological outlook.

Application forms and further details from :-

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A RESEARCH ASSISTANT is required to carry oal work leading to the implementation of an automated directable system and a parisis control system. Candidates should lave a good degree with substantial content of Computer Budles/Science, Experience of Cobel/Plan Programming in library or similar detaproceasing held will be an advantage.

The appointment is for an initial part of one year with the pessibility of renewal for a turbar one or two years.

The commending salary with he althor \$2,460 or \$2,721 with annual increments. An additional \$312 p.s. supplement is also payable.

Application forms to be refurned by March 25, 1977, can be ob-lained with lutther particulors from the Personnel Officer,

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spatial experience and activity. Sulary Scale: £6,252-£6,054 (bor). £7,890.

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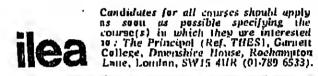
Two years' parts into study. Specialises in extended study of further education. Equips students to undertake research in turther education. Cambidates must have initial teacher training and have reached a high level of attainment in the Diploma in Further Education or its equivalent.

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The Official Publications Library, accessible only loop the North Entrance of the Grubbi Museum/Offich Library, will be open on a Control MSS and Printed Books will be open on Other than the Best of Chemist MSS and Printed Books will be open throughout the period as usual.

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